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JVC

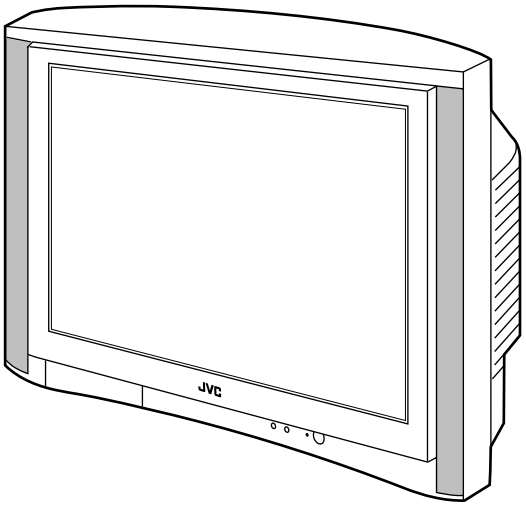
SERVICE MANUAL

COLOR TELEVISION

BASIC CHASSIS
CH

AV-29WS3 /M

RM-C1010-1H



CONTENTS

- SPECIFICATIONS 2
- OPERATING INSTRUCTIONS (APPENDIX)
- SAFETY PRECAUTIONS 3
- FEATURES 4
- FUNCTIONS 5
- SPECIFIC SERVICE INSTRUCTIONS 6
- SERVICE ADJUSTMENTS 14
- STANDARD CIRCUIT DIAGRAM (APPENDIX) 2-1
- PARTS LIST 41

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No. 52081
Dec. 2002

SPECIFICATIONS

Items		Contents
Dimensions (W × H × D)		81.2cm × 58.42cm × 51.8cm
Mass		45kg
TV RF System		B, G, I, D, K, K1, M
Color System	TV Mode	PAL / SECAM / NTSC3.58 / NTSC4.43
	VIDEO Mode	PAL / SECAM / NTSC3.58 / NTSC4.43
Stereo system		A2/NICAM (B / G, I, D / K) System
Teletext system		FLOF(Fastext), WST(World Standard Text)
Receiving Frequency	VHF (VL)	46.25MHz – 140.25MHz (AS0 – S6)
	VHF (VH)	147.25MHz – 423.25MHz (S7 – S36)
	UHF	431.25MHz – 863.25MHz (S37 – CHINA 57)
	CATV	● Cable TVs of Mid (X-Z, S1-S10) Super (S11-S20) & Hyper (S21-S41) bands receivable
Intermediate Frequency	VIF Carrier	38.0MHz
	SIF Carrier	31.5MHz (6.5MHz) 32.0MHz (6.0MHz) 32.5MHz (5.5MHz) 33.5MHz (4.5MHz)
Color Sub Carrier Frequency	PAL	4.43MHz
	SECAM	4.40625MHz / 4.25MHz
	NTSC	3.58MHz / 4.43MHz
Aerial Input Terminal		75Ω Unbalanced, coaxial
Power Input		AC110V – AC240V, 50Hz / 60Hz
Power Consumption		175W (Max.) / 116W (Avg.)
Picture Tube		Visible size : 68cm measured diagonally
High Voltage		32.0kV +1kV/ – 1.5kV (at cut-off in service mode)
Speaker		6.5cm × 13cm Oval type ×2
Audio Output		7W + 7W
Video / Audio Input (1 / 2 / 3)	Video (1 / 3)	1V(p-p), 75Ω, RCA pin jack ×2
	Audio (1 / 2 / 3)	500mV(rms) (-4dBs), High impedance, RCA pin jack ×6
	S-Video (Input 1 Over)	Mini DIN4-pin ×1 Y : 1V(p-p), positive (negative sync provided), 75Ω C : 0.286V(p-p) (burst signal), 75Ω
	Component Input (Input 2)	Y : 1V(p-p), positive (negative sync provided), 75Ω, RCA pin jack ×1 C_B/C_R : 0.7V(p-p), 75Ω, RCA pin jack ×2
Video / Audio Output	Video	1V(p-p), 75Ω, RCA pin jack ×1
	Audio	500mV(rms)(-4dBs), Low impedance (400Hz when modulated 100%), RCA pin jack ×2
Headphone Jack		Stereo mini jack (ϕ3.5mm)
Remote Control Unit		RM-C1010-1H (Battery size: AA/R06/UM-3 × 2)

Design & specifications are subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED (NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND and never measure the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND at the same time with a measuring apparatus (oscilloscope etc.).
   If above note will not be kept, a fuse or any parts will be broken.

5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).

6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

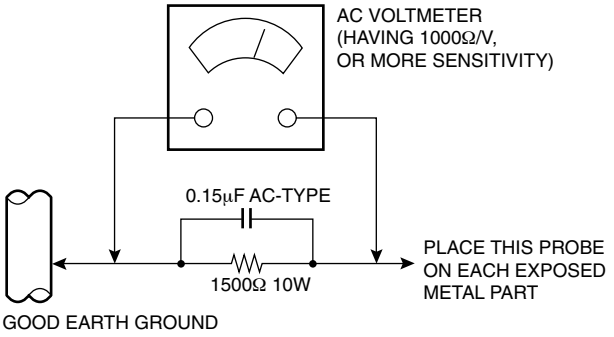
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

9. **Isolation Check**
   (Safety for Electrical Shock Hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

● **Alternate Check Method**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).

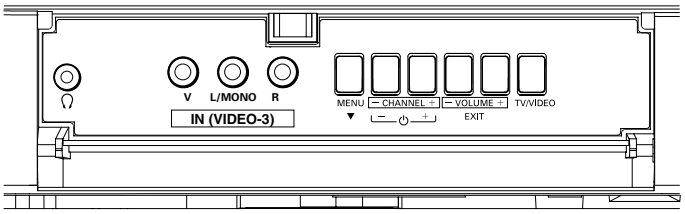


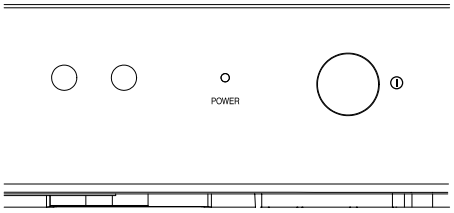
FEATURES

- New chassis design enables use of an interactive on-screen control.
- Pure flat CRT produces fine textured picture in every detail.
- Wide range voltage (110V ~ 240V) for AC power input.
- With AUDIO/VIDEO/COMPONENT input terminals.
- I^2C bus control utilizes single chip ICs.
- By means of AUTO PROGRAM, the TV stations can be selected automatically and the TV channels can also be rearranged automatically.
- Built-in DIGITAL ECO MODE (ECONOMY, ECOLOGY).
  In accordance with the brightness in a room, the brightness and/or contrast of the picture can be adjusted automatically to make the optimum picture which is easy on the eye.
- Built-in OFF TIMER & RETURN +.

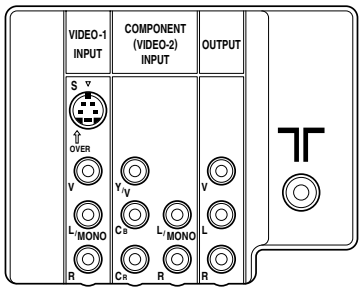
FUNCTIONS

■ FRONT PANEL

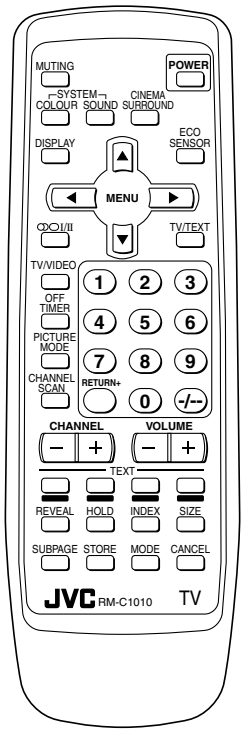




■ REAR PANEL



■ REMOTE CONTROL UNIT [RM-C1010-1H]



SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power supply cord.
2. Remove the 16 screws marked Ⓐ as shown in Fig.1.
3. Withdraw the Rear cover toward you.

[CAUTION]

- When reinstalling the rear cover, carefully push it inward after inserting the Main PWB into the rear cover groove.

REMOVING THE CHASSIS (CHASSIS BASE AND CONTROL BASE)

- After removing the rear cover.

1. Slightly raise the both sides of the chassis by hand and remove the 2 claws marked Ⓑ under the chassis from the front cabinet as shown in Fig.1.
2. Withdraw the chassis backward.

   (If necessary, take off the wire clamp, connector's etc.)

   * When conducting a check with power supplied, be sure to confirm that the CRT earth wire is connected to the CRT SOCKET PWB and the Main PWB.

REMOVING THE AV TERMINAL BOARD

- After removing the rear cover.

1. Remove the 4 screws marked Ⓒ as shown in Fig.1.
2. When you pull out the AV Terminal board in the direction of arrow marked Ⓓ as shown in Fig.1, it can be removed.

REMOVING THE CONTROL BASE

- After removing the rear cover and the chassis.

1. While pushing down the 2 claws marked Ⓔ as shown in Fig. 2 and pull out the Control base in the direction of arrow marked Ⓕ as shown in Fig. 2, the control base can be removed.
   (If necessary, take off the wire, connector's etc.)

REMOVING THE SPEAKER

- After removing the rear cover.

1. Remove the 2 screws marked Ⓖ as shown in Fig.1.
2. Withdraw the speaker backward.
3. Follow the same steps when removing the other hand speaker.

CHECKING THE MAIN PW BOARD

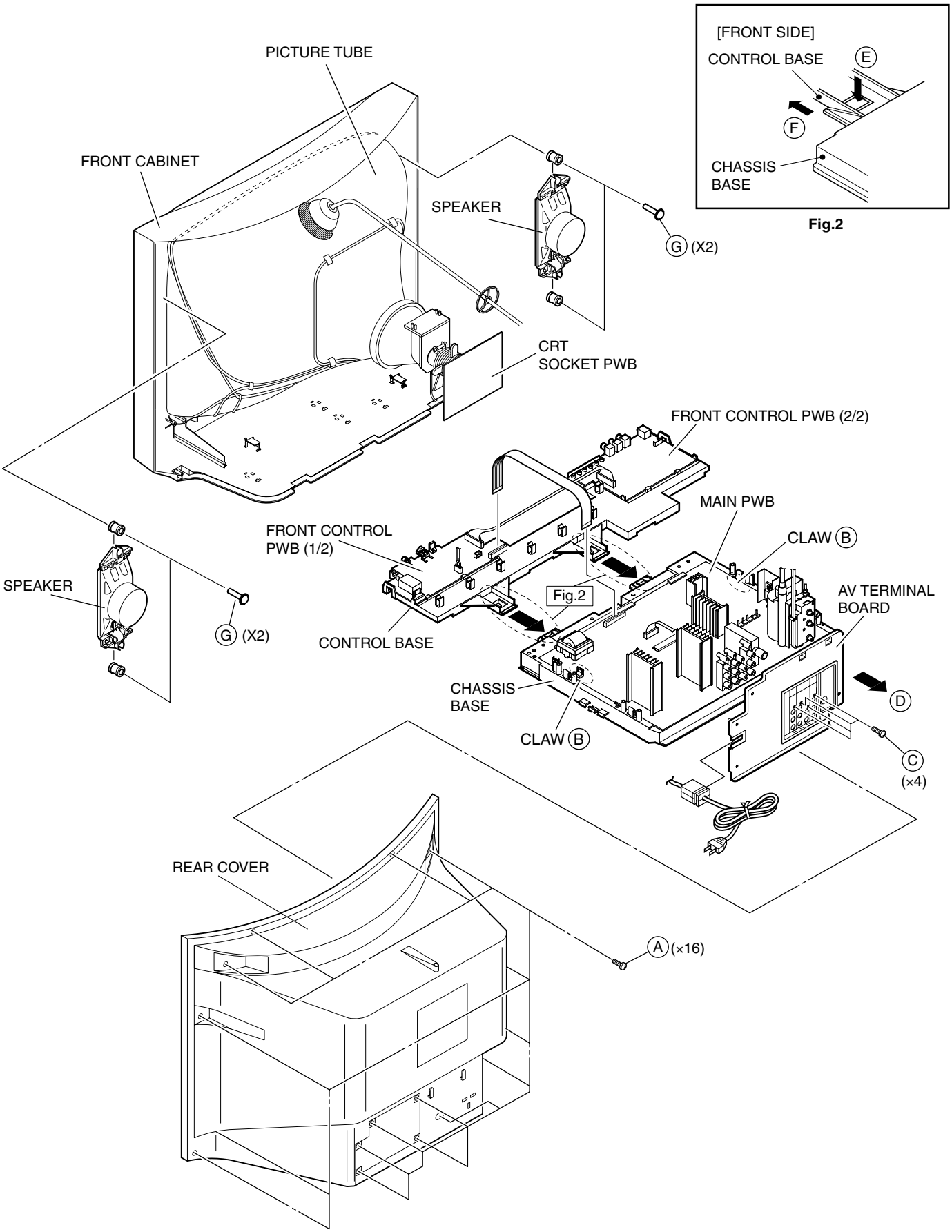
1. To check the back side of the Main PWB.
   1) Pull out the chassis. (Refer to REMOVING THE CHASSIS).
   2) Erect the chassis vertically so that you can easily check the back side of the Main PWB.

[CAUTION]

- When erecting the chassis, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the CRT earth wire and other connectors are properly connected.
- When repairing, connect the Deg. coil to the DEG. connector on the Main PWB.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.


PICTURE TUBE
FRONT CABINET
SPEAKER
G (X2)
CRT
SOCKET PWB
FRONT CONTROL PWB (2/2)
MAIN PWB
FRONT CONTROL
PWB (1/2)
CLAW B
Fig.2
AV TERMINAL
BOARD
SPEAKER
G (X2)
CONTROL BASE
CHASSIS
BASE
CLAW B
D
C
(×4)
REAR COVER
A (×16)

[FRONT SIDE]
CONTROL BASE
E
F
CHASSIS
BASE

Fig.2

Fig.1

REMOVING THE CRT

* Replacement of the CRT should be performed by 2 or more persons.

● After removing the rear cover, chassis etc.,

1. Putting the CRT change table on soft cloth, the CRT change table should also be covered with such soft cloth (shown in Fig. 3).
2. While keeping the surface of CRT down, mount the TV set on the CRT change table balanced will as shown in Fig. 4.
3. Remove 4 screws marked by arrows with a box type screwdriver as shown in Fig. 4.

● Since the cabinet will drop when screws have been removed, be sure to support the cabinet with hands.

4. After 4 screws have been removed, put the cabinet slowly on cloth (At this time, be carefully so as not to damage the front surface of the cabinet) shown in Fig. 5.

● The CRT should be assembled according to the opposite sequence of its dismounting steps.

* The CRT change table should preferably be smaller that the CRT surface, and its height be about 35cm.

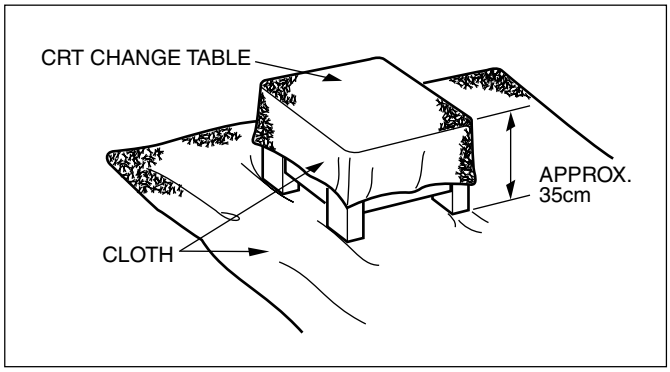


Fig. 3

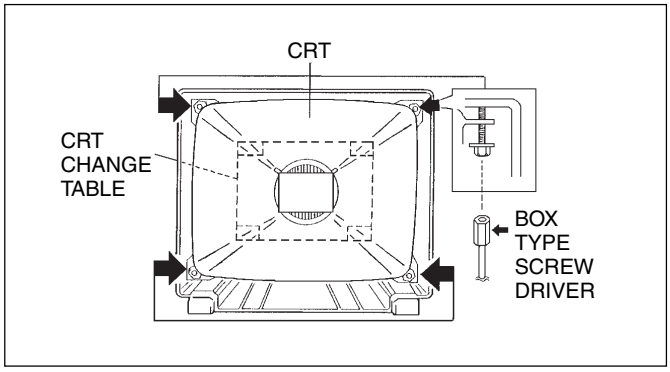


Fig. 4

COATING OF SILICON GREASE FOR ELECTRICAL INSULATION ON THE CRT ANODE CAP SECTION.

● Subsequent to replacement of the CRT and HV transformer or repair of the anode cap, etc. by dismounting them, be sure to coat silicon grease for electrical insulation as shown in Fig. 6.

1. Wipe around the anode button with clean and dry cloth. (Fig. 6)
2. Coat silicon grease on the section around the anode button. At this time, take care so that any silicon greases does not sticks to the anode button. (Fig. 7)

★ **Silicon grease product No. KS - 650N**

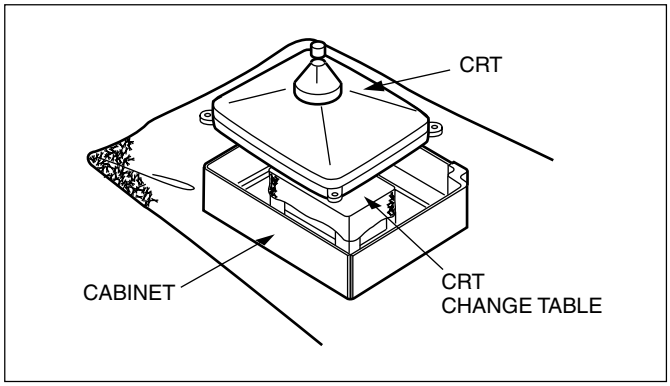


Fig. 5

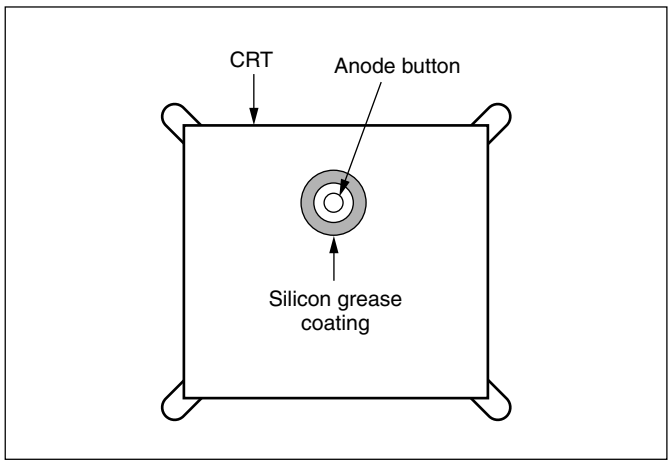


Fig. 6

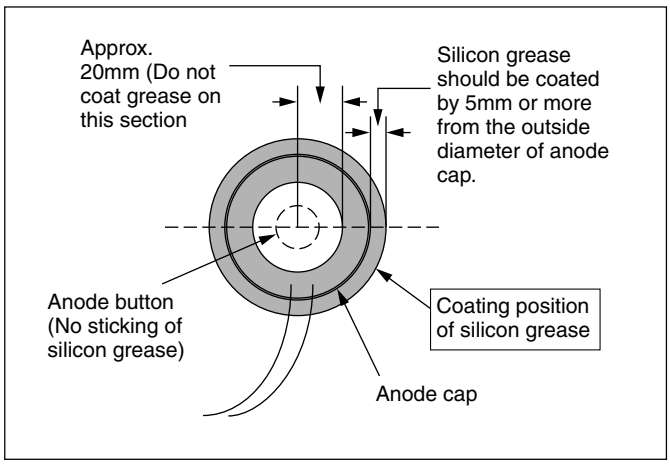


Fig. 7

REPLACEMENT OF MEMORY IC

1. MEMORY IC

This TV uses the following memory IC.

Memory IC: IC1702 on MAIN PW Board

The memory IC memorizes data for correctly operating the video and deflection circuits. When replacing the memory IC, be sure to use the same type IC written with the initial values of data. In other words, use the specific IC listed in “PRINTED WIRING BOARD PARTS LIST”. For its mounting location, refer to “ADJUSTMENT LOCATIONS”.

2. PROCEDURE FOR REPLACING MEMORY IC

(1) Power off

Switch the power off and unplug the power cord from the wall outlet.

(2) Replacing the memory IC

Replace the memory IC with new one. Be sure to use the memory IC written with the initial data values.

(3) Power on

Plug the power cord into the wall outlet and switch the power on.

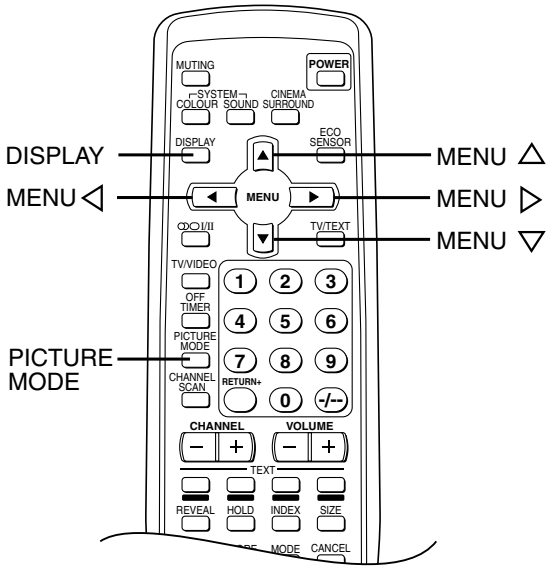
(4) Check and setting of SYSTEM CONSTANT SET:

1) Press the DISPLAY key and the PICTURE MODE key on the remote control unit simultaneously.
   The SERVICE MENU screen will be displayed.(See Fig.1.)
2) In the SERVICE MENU, press the DISPLAY key and PICTURE MODE key simultaneously. Then, the SYSTEM CONSTANT SET screen will be displayed.(See Fig.2.)
3) Check whether the setting values of the SYSTEM CONSTANT SET are the same as those indicated in Table1.
   If the value is different, select the setting item with the MENU ▽/△ key, and set the correct value with the MENU ◁/▷ key.
4) Press the DISPLAY key twice to return to the normal screen.

(5) Receive channel setting

Refer to the **OPERATING INSTRUCTIONS** and set the receive channels (channels preset).

NAME OF REMOTE CONTROL KEYS



(6) User setting

Check the user setting values in Table 2, and if setting value is different, set the correct value.
For setting, refer to the **OPERATING INSTRUCTIONS**.

(7) Setting of SERVICE MENU

Verify the setting for each setting item in the SERVICE MENU.(See Table 3.) If readjustment is necessary, perform adjustment referring to “SERVICE ADJUSTMENTS”.

SERVICE MENU

```
SERVICE MENU

1. IF              2. VC
3. DEF             4. VSM PRESET
5. PRESET          6. A2NICAM
7. PLUG & PLAY (ON)
1-7 : SELECT       DISPLAY : EXIT

******* **** ***** *****
     **** **** *** ***
```

Fig. 1

SYSTEM CONSTANT-Ⅰ

```
SYSTEM CONSTANT  SET 1

SYSTEM            MULTI
COMB              YES
TILT              YES
TEXT              ERCMI
SUPER BASS        YES
LANGUAGE          E/R/C/M/I

△▽ : SEL  −+ : OPE  DISP : EXIT
```

SYSTEM CONSTANT-Ⅱ

```
SYSTEM CONSTANT  SET 2

MSP               YES
BILINGUAL         YES
B / B SOUND       NO
TUNER             MU
COLOR AUTO        YES

△▽ : SEL  −+ : OPE  DISP : EXIT
```

SYSTEM CONSTANT-Ⅲ

```
SYSTEM CONSTANT  SET 3

LOCK          1 MHz    : 040
              500 KHz  : 040
              250 KHz  : 040
              156. 25 KHz : 030
              31.25 KHz : 030

△▽ : SEL  −+ : OPE  DISP : EXIT
```

SYSTEM CONSTANT-Ⅳ

```
SYSTEM CONSTANT  SET 4

3D SURROUND       YES
3CH VOL/TONE      YES
AMP TUNER         NO

△▽ : SEL  −+ : OPE  DISP : EXIT
```

Fig. 2

SETTING OF SYSTEM CONSTANT SET

Setting item	Setting content	Setting value
SYSTEM	MULTI → TRIPLE → PAL → SINGLE → VIET	MULTI
COMB	YES → NO	YES
TILT	YES → NO	YES
TEXT	ERCMI → ERAPU → NO	ERCMI
SUPER BASS	YES → NO	NO
LANGUAGE	E/R/C/M/I → E/R/C → E/C	E/R/C/M/I
MSP	YES → NO	YES
BILINGUAL	YES → NO	NO
B/B SOUND	YES → NO	NO
TUNER	MU → MA	MU
COLOR AUTO	YES → NO	NO
LOCK 1MHz	000 → 240	040
500KHz	000 → 240	040
250KHz	000 → 240	040
156.25KHz	000 → 240	030
31.25KHz	000 → 240	030
3D SURROUND	YES → NO	YES
3CH VOL/TONE	YES → NO	YES
AMP TUNER	YES → NO	NO

Table 1

USER SETTING VALUES

Setting item	Setting value
SUB POWER	ON
CHANNEL POSITION	1 POSITION
CHANNEL PRESET	REFER TO OPERATING INSTRUCTIONS
VOLUME	15 ± 2
TV/VIDEO	TV
VNR	OFF
COMPRESS (16:9)	OFF
AUTO SHUTOFF	OFF
CHILD LOCK	OFF
BLUE BACK	ON
VIDEO-2 SET	VIDEO
LANGUAGE	ENG
AI VOLUME	ON
ON SCREEN DISPLAY	POSITION INDICATION
COLOR SYSTEM	PAL
SOUND SYSTEM	B/G
PICTURE MODE-VSM	BRIGHT
OFF TIMER	00
ECO SENSOR	OFF
BASS	CENTER
TREBLE	CENTER
BALANCE	CENTER
CINEMA SURROUND	OFF
STEREO MODE	STEREO

Table 2

SERVICE MENU SETTING ITEMS

Service menu	Setting item
1. IF	1. VCO 2. DELAY POINT
2. VC	1. CUTOFF(R/G) 2. DRIVE(R/G/B) 3. BRIGHT 4. CONT 5. COLOR 6. TINT 7. SHARP 8. YDELAY 9. AMP T. SHARP **Do not adjust**
3. DEF	1. VER. SLOPE 2. VER. HEIGHT 3. VER. POSITION 4. VER. SCURVE 5. HOR. POSITION 6. HOR. WIDTH 7. EW-PIN 8. EW-TRAPEZ 9. UP CORNER 10. DW CORNER 11. HOR. PARALL 12. HOR. BOW 13. V. ZOOM
4. VSM PRESET **(BRIGHT/STD/SOFT)** **Do not adjust**	1. TINT 2. COLOR 3. BRIGHT 4. PICTURE 5. DETAIL

Service menu	Setting item
5. PRESET **Do not adjust**	1. PSNS 2. ACL 3. MUS 4. MAT 5. FCO 6. BPS 7. IFLH 8. VID 9. STM 10. AFCW 11. VSW 12. FFI 13. AGC 14. CL 15. AKB 16. HBL 17. BKS 18. READ STATUS 19. VNR 20. PEAK 21. IVG 22. WPL 23. SOFT CLIPPER 24. IF PLL OFFSET 25. OVERSHOOT 26. HCO 27. HP2 28. AI VOLUME ADN 31. CCCLOOP
6. A2NICAM **Do not adjust**	1. ERROR LIMIT 2. A2 ID THR 3. SOUND SYSTEM
7. PLUG & PLAY(ON) **Do not adjust**	

Table 3

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

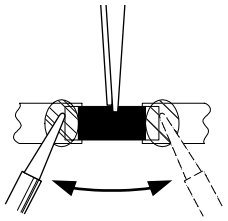
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

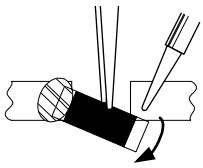
1. How to remove Chip parts

◆ **Resistors, capacitors, etc.**

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

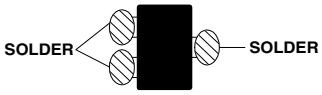


(2) Shift with tweezers and remove the chip part.

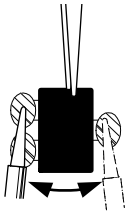


◆ **Transistors, diodes, variable resistors, etc.**

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

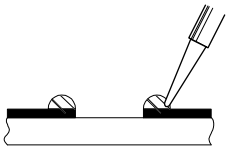


Note : After removing the part, remove remaining solder from the pattern.

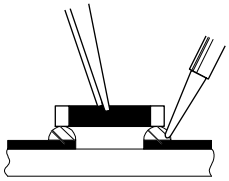
2. How to install Chip parts

◆ **Resistors, capacitors, etc.**

(1) Apply solder to the pattern as indicated in the figure.



(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

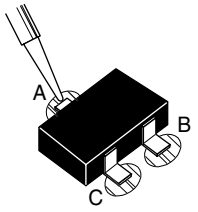


◆ **Transistors, diodes, variable resistors, etc.**

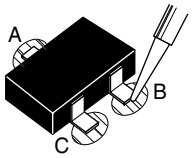
(1) Apply solder to the pattern as indicated in the figure.

(2) Grasp the chip part with tweezers and place it on the solder.

(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



SERVICE ADJUSTMENTS

ADJUSTMENT PREPARATION

1. **You can make the necessary adjustments for this unit with either the remote control unit or with the adjustment equipment and parts as given below.**
2. **Adjustment with the remote control unit is made on the basis of the initial setting values, however, the new setting values which set the screen to its optimum condition may differ from the initial settings.**
3. Make sure that AC power is turned on correctly.
4. Turn on the power for the set and test equipment before use, and start the adjustment procedures after waiting at least 30 minutes.
5. Unless otherwise specified, prepare the most suitable reception or input signal for adjustment.
6. Never touch any adjustment parts, which are not specified in the list for this adjustment-variable resistors, transformers, capacitors, etc.
7. Presetting before adjustment.
   Unless otherwise specified in the adjustment instructions, preset the following functions with the remote control unit.

● User mode setting position

Setting item	Setting value
PICTURE MODE(VSM)	BRIGHT
VNR	OFF
BASS, TREBLE, BALANCE	CENTER
TINT, COLOR, BRIGHT, DETAIL	CENTER
PICTURE	MAXIMUM

MEASURING INSTRUMENT

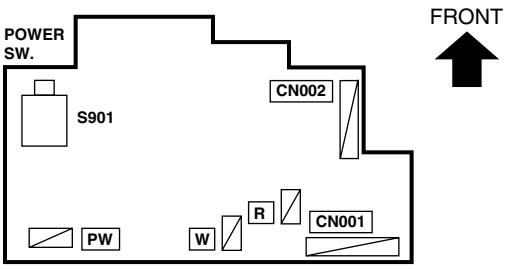
1. DC voltmeter (or Digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [PAL/SECAM/NTSC]
4. Remote control unit

ADJUSTMENT ITEMS

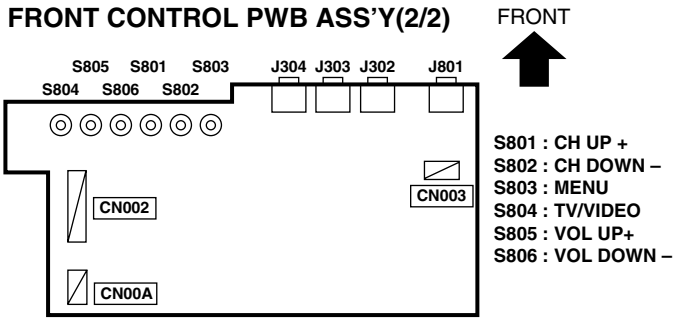
- B1 POWER SUPPLY
- FOCUS ADJUSTMENT
- IF CIRCUIT ADJUSTMENTS
  - Adjustment of VCO (CW)
  - Adjustment of DELAY POINT (AGC TAKE-OVER)
- VC (VIDEO/CHROMA) CIRCUIT ADJUSTMENTS
  - Adjustment of WHITE BALANCE (Low light)
  - Adjustment of WHITE BALANCE (High light)
  - Adjustment of SUB BRIGHT
  - Adjustment of SUB CONTRAST
  - Adjustment of SUB COLOR-**I**
  - Adjustment of SUB COLOR-**II**
  - Adjustment of SUB TINT-**I**
  - Adjustment of SUB TINT-**II**
- DEFLECTION CIRCUIT ADJUSTMENTS
  - Adjustment of V. SLOPE
  - Adjustment of V. POSITION
  - Adjustment of V. HEIGHT
  - Adjustment of H. POSITION
  - Adjustment of H. WIDTH
  - Adjustment of SIDE PIN
  - Adjustment of TRAPEZIUM
  - Adjustment of V. S-CURVE
  - Adjustment of CORNER
  - Adjustment of H. PARALLEL
  - Adjustment of H. BOW
- VSM PRESET SETTING
- PRESET SETTING
- AUDIO ADJUSTMENT
- PURITY ADJUSTMENT
- CONVERGENCE ADJUSTMENTS
  - Adjustment of STATIC CONVERGENCE
  - Adjustment of DYNAMIC CONVERGENCE

ADJUSTMENT LOCATIONS

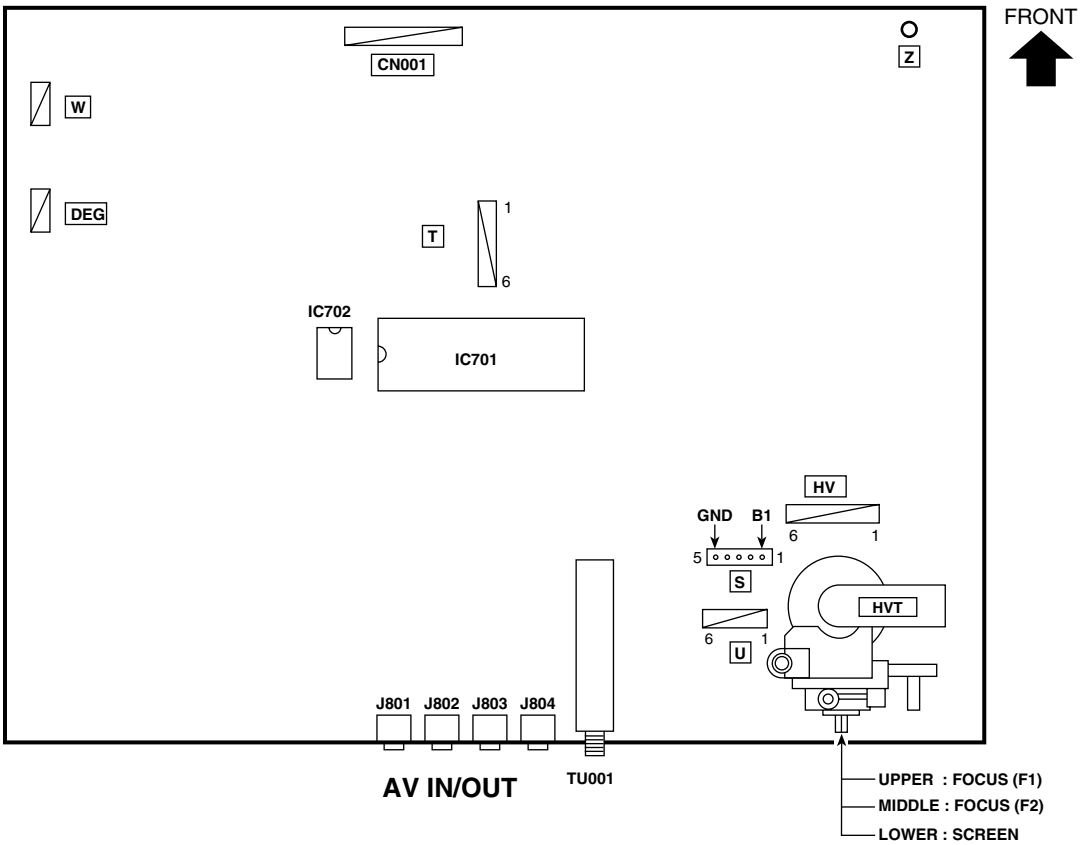
FRONT CONTROL PWB ASS'Y(1/2)



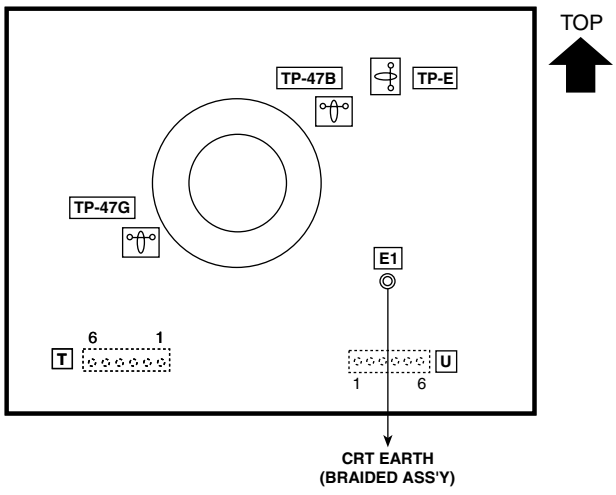
FRONT CONTROL PWB ASS'Y(2/2)



MAIN PWB ASS'Y



CRT SOCKET PWB ASS'Y (SOLDER SIDE)



BASIC OPERATION IN SERVICE MENU

1. TOOL OF SERVICE MENU OPERATION

Operate the SERVICE MENU with the remote control unit.

2. SERVICE MENU ITEMS

With the SERVICE MENU,various settings (adjustments)can be made,and they are broadly classified in the following items of settings:

- 1.IF ..... For entering/adjusting the setting values (adjustment values)of the IF circuit.
- 2.VC ..... For entering/adjusting the setting values (adjustment values)of the VIDEO/CHROMA circuit.
- 3.DEF ..... For entering/adjusting the setting values (adjustment values)of the DEFLECTION circuit.
- 4.VSM PRESET ..... For setting the values of STANDARD,SOFT and BRIGHT. (VSM:video status memory)
- 5.PRESET ..... For setting the values of the preset.
- 6.A2NICAM ..... For entering/adjusting the setting values (adjustment values)of the multiplicity sound circuit.
- 7.PLUG & PLAY (ON) ..... This is not used for service.

3. BASIC OPERATION IN SERVICE MENU

(1) How to enter SERVICE MENU

Press the DISPLAY key and the PICTURE MODE key on the remote control unit simultaneously.
The SERVICE MENU screen will be displayed. (See Fig. 1 on the next page.)

(2) Selection of SUB MENU SCREEN

Press one of the keys 1 to 7 on the remote control unit,and select the SUB MENU SCREEN from the SERVICE MENU. (See Fig.1 on the next page.)

SERVICE MENU → SUB MENU
1. IF
2. VC
3. DEF
4. VSM PRESET
5. PRESET
6. A2NICAM
7. PLUG & PLAY (ON)

(3) Method of Setting

*Once the setting values are set,they are memorized automatically.
*It must not adjust without inputting a signal.

1) 1. IF

[1.VCO]

(a) 1 Key ..... Select **1. IF**.
(b) 1 Key ..... Select **1. VCO**.
(c) DISPLAY Key ..... When this is pressed twice, you will return to the SERVICE MENU.
- Under normal conditions, no adjustment is required.

[2.DELAY POINT]

(a) 1 Key ..... Select **1. IF**.
(b) 2 Key ..... Select **2.DELAY POINT**.
(c) MENU ◁/▷ Key ..... Adjust the setting value.
(d) DISPLAY Key ..... When this is pressed twice, you will return to the SERVICE MENU.

2) 2. VC, 3. DEF, 4. VSM PRESET, 5. PRESET and 6. A2NICAM

(a) 2 ~6 Keys ..... Select one from **2. VC**, **3. DEF**, **4. VSM PRESET**, **5. PRESET** and **6. A2NICAM**.
(b) MENU ▽/△ key ..... Select setting items.
(c) MENU ◁/▷ Key ..... Adjust the setting values of the setting items.
- Use the number keys on the remote control unit for setting of WHITE BALANCE. For the setting, refer to each item concerned.

(d) DISPLAY Key ..... When this is pressed, you will return to the SERVICE MENU.

3) 7. PLUG & PLAY (ON)

This is not used for service.

(4) Release of SERVICE MENU

After completing the setting, return to the SERVICE MENU by pressing the DISPLAY key, then again press the DISPLAY key to return to the normal screen.

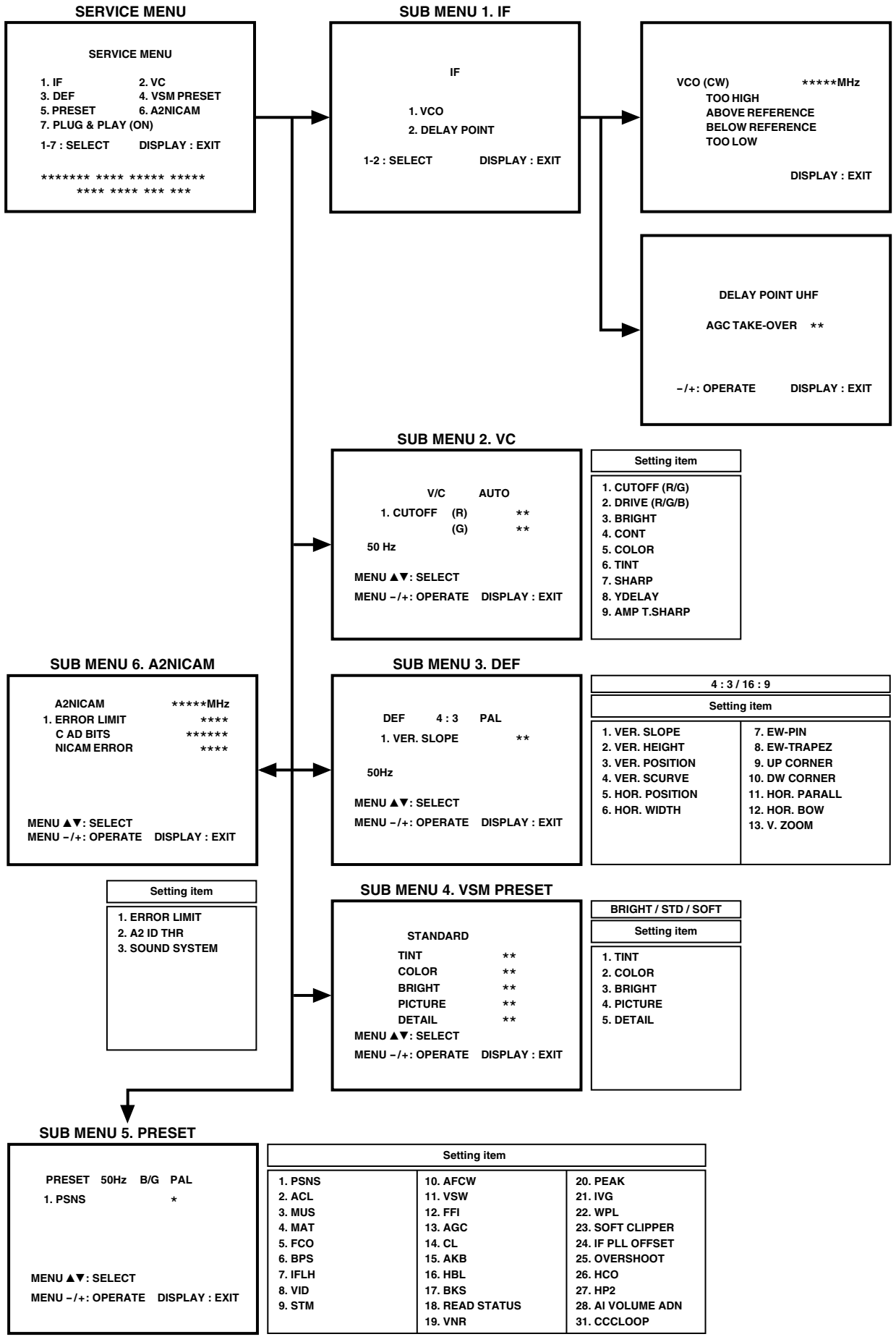

SERVICE MENU
SERVICE MENU
1. IF 2. VC
3. DEF 4. VSM PRESET
5. PRESET 6. A2NICAM
7. PLUG & PLAY (ON)
1-7 : SELECT DISPLAY : EXIT
******* **** ***** *****
**** **** *** ***
SUB MENU 1. IF
IF
1. VCO
2. DELAY POINT
1-2 : SELECT DISPLAY : EXIT
VCO (CW) *****MHz
TOO HIGH
ABOVE REFERENCE
BELOW REFERENCE
TOO LOW
DISPLAY : EXIT
DELAY POINT UHF
AGC TAKE-OVER **
–/+: OPERATE DISPLAY : EXIT
SUB MENU 2. VC
V/C AUTO
1. CUTOFF (R) **
(G) **
50 Hz
MENU ▲▼: SELECT
MENU –/+: OPERATE DISPLAY : EXIT
Setting item
1. CUTOFF (R/G)
2. DRIVE (R/G/B)
3. BRIGHT
4. CONT
5. COLOR
6. TINT
7. SHARP
8. YDELAY
9. AMP T.SHARP
SUB MENU 6. A2NICAM
A2NICAM *****MHz
1. ERROR LIMIT ****
C AD BITS ******
NICAM ERROR ****
MENU ▲▼: SELECT
MENU –/+: OPERATE DISPLAY : EXIT
Setting item
1. ERROR LIMIT
2. A2 ID THR
3. SOUND SYSTEM
SUB MENU 3. DEF
DEF 4 : 3 PAL
1. VER. SLOPE **
50Hz
MENU ▲▼: SELECT
MENU –/+: OPERATE DISPLAY : EXIT
4 : 3 / 16 : 9
Setting item
1. VER. SLOPE
2. VER. HEIGHT
3. VER. POSITION
4. VER. SCURVE
5. HOR. POSITION
6. HOR. WIDTH
7. EW-PIN
8. EW-TRAPEZ
9. UP CORNER
10. DW CORNER
11. HOR. PARALL
12. HOR. BOW
13. V. ZOOM
SUB MENU 4. VSM PRESET
STANDARD
TINT **
COLOR **
BRIGHT **
PICTURE **
DETAIL **
MENU ▲▼: SELECT
MENU –/+: OPERATE DISPLAY : EXIT
BRIGHT / STD / SOFT
Setting item
1. TINT
2. COLOR
3. BRIGHT
4. PICTURE
5. DETAIL
SUB MENU 5. PRESET
PRESET 50Hz B/G PAL
1. PSNS *
MENU ▲▼: SELECT
MENU –/+: OPERATE DISPLAY : EXIT
Setting item
1. PSNS
2. ACL
3. MUS
4. MAT
5. FCO
6. BPS
7. IFLH
8. VID
9. STM
10. AFCW
11. VSW
12. FFI
13. AGC
14. CL
15. AKB
16. HBL
17. BKS
18. READ STATUS
19. VNR
20. PEAK
21. IVG
22. WPL
23. SOFT CLIPPER
24. IF PLL OFFSET
25. OVERSHOOT
26. HCO
27. HP2
28. AI VOLUME ADN
31. CCCLOOP

Fig. 1

ADJUSTMENTS

B1 POWER SUPPLY

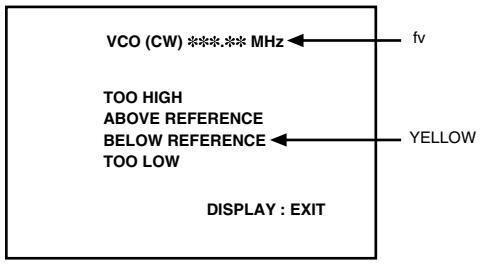
Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 POWER SUPPLY	**Signal generator** **DC voltmeter**	**B1 (pin 1) GND (pin 5) [CN00S connector in MAIN PWB]**		1. Receive a black and white signal. 2. Connect a DC voltmeter between B1 and GND (between pin 1 and 5 of the connector CN00S). 3. Make sure that the voltage is **DC134.5 ± 2V**.

FOCUS ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of FOCUS	**Signal generator**		**FOCUS VR [In HVT]**	**Notes:** • Set PICTURE MODE (VSM) to "BRIGHT". • The final adjustment of CONVERGENCE must be done after the FOCUS adjustment. (CONVERGENCE is changed by FOCUS adjustment.) When makes difference by FOCUS adjustment, should be reconfirming PURITY adjustment. 1. Receive a cross-hatch signal. 2. While looking at the screen centre, adjust the FOCUS VR so that the vertical and horizontal lines will be clear and in fine detail. 3. Make sure that the picture is in focus even when the screen gets darkened.

IF CIRCUIT ADJUSTMENTS

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VCO (CW)	**Remote control unit**		**VCO (CW)**	**Note:** • Under normal conditions, no adjustment is required. 1. Select **1. IF** from the SERVICE MENU. 2. Select **1. VCO** by pressing the **1** key on the remote control unit. 3. Receive a broadcast signal. 4. Check the characters color of the **BELOW REFERENCE** displayed to **yellow**. 5. Press the DISPLAY key three times to return to normal screen.
Adjustment of DELAY POINT (AGC TAKE-OVER)	**Remote control unit**		**DELAY POINT**	1. Receive a black and white broadcast signal (color off). 2. Select **1. IF** from the SERVICE MENU. 3. Select **2. DELAY POINT** by pressing the **2** key on the remote control unit. 4. Adjust the MENU ◁/▷ key in order to eliminate any noise or beat from the image. Any increase above the initial value produces noise and any decrease below it produces beat. 5. Press the DISPLAY key three times to return to the normal screen. 6. Turn to other channels and make sure that there are no irregularities.



Setting (Adjustment time)	Initial setting value	
	NTSC 3.58	OTHERS
DELAY POINT (AGC TAKE-OVER)	30	26

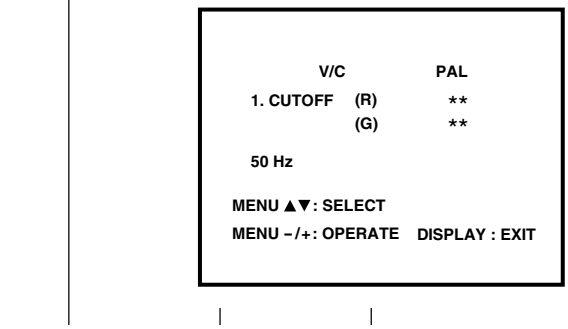
VC (VIDEO/CHROMA) CIRCUIT ADJUSTMENTS

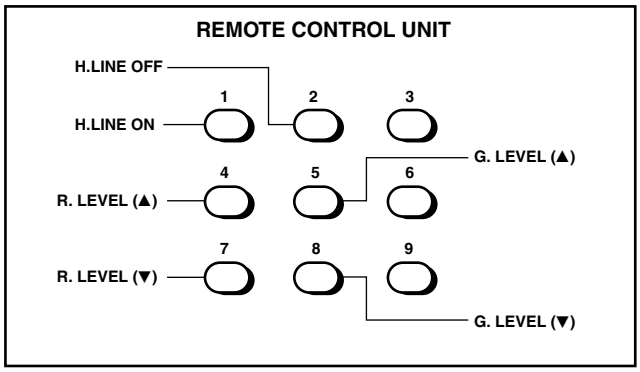
The setting (adjustment) using the remote control unit is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
● Do not change the initial setting values of the setting (adjustment) items not listed in "ADJUSTMENT".

[SUB MENU 2. VC] : **Do not adjust.**

	Setting (Adjustment) item	Variable range	Initial setting value				
			PAL	SECAM	NTSC3.58	NTSC4.43	COMPONENT(V–2)
1	CUT-OFF (R/G)	-32 – +31	0/0	←	←	←	-2/+14
2	DRIVE (R/G/B)	-32 – +31	0/0/0	←	←	←	←
3	BRIGHT (TV/V-1/V-2/V-3)	-32 – +31	-13/0/0/+1	←	←	←	—/—/-1/—
4	CONT	-32 – +31	-10	←	←	←	←
5	COLOR	-32 – +31	-4	-13	-11	+1	0
6	TINT (TV/VIDEO)	-32 – +31	—	—	-15/+2	—/+1	—
7	SHARP (TV/VIDEO)	-32 – +31	-28/-17	←	←	←	—/0
8	Y DELAY (TV/VIDEO/S-VHS)	-8 – +7	-7/+1/0	-7/+1/+1	0/+1/+1	0/0/+1	—/+1/—
9	AMP T. SHARP	-32 – +31	0	←	←	←	←

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (Low light)	**Signal generator** **Remote control unit**		**1. CUTOFF (R)** **CUTOFF (G)** **SCREEN VR [In HVT]**	**Note:** • Set PICTURE MODE (VSM) to "BRIGHT". 1. Receive a PAL black and white signal (color off). 2. Select **2. VC** from the SERVICE MENU. 3. Select **1. CUTOFF (R)** and **(G)** with MENU ▽/△ key, and set each value to initial setting value with the **4** and **7** keys, or **5** and **8** keys on the remote control unit. 4. Press the **1** key on the remote control unit to produce a single horizontal line. 5. Turn the SCREEN VR fully counterclockwise, then slowly turn it clockwise to where a red, blue or green color is faintly visible. 6. Use the keys **4** and **7** or **5** and **8** on the remote control unit and adjust the other 2 colors to where the single horizontal line appears white. 7. Turn the SCREEN VR to where the single horizontal line glows faintly. 8. Press the **2** key to return to **1. CUTOFF** screen. 9. Press the DISPLAY key twice to return to the normal screen.





Setting (Adjustment) Item		Variable range	Initial setting value
1. CUT OFF	R	–32 — +31	0
	G	–32 — +31	0

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr>
<td>Adjustment of WHITE BALANCE (High light)</td>
<td>Signal generator

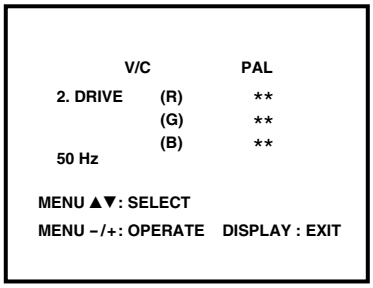
Remote control unit</td>
<td></td>
<td>2. DRIVE (R)
DRIVE (G)
DRIVE (B)</td>
<td>
Notes:
• Proceed to the following adjustment after having completed the adjustment of LOW LIGHT WHITE BALANCE.
• Set PICTURE MODE (VSM) to “BRIGHT”.

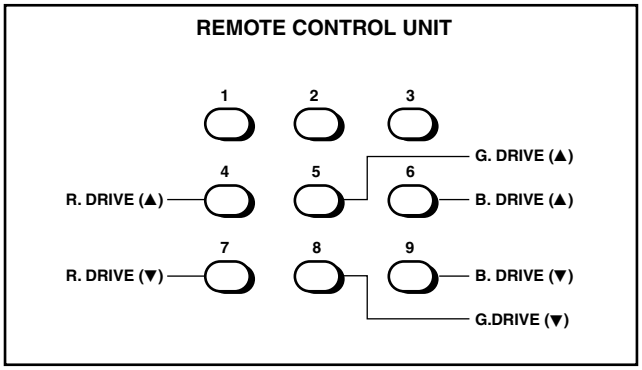
1. Receive a PAL black and white signal (color off).
2. Select 2. VC from the SERVICE MENU.
3. Select 2. DRIVE (R), (G) and (B) with MENU ▽/△ key, and set each value to initial setting value with the 4 to 9 keys on the remote control unit.
4. Use the keys 4 to 9 to produce a white screen.
5. Press the DISPLAY key twice to return to the normal screen.

<table>
<tr><th>Setting (Adjustment) Item</th><th></th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td rowspan="3">2. DRIVE</td><td>R</td><td>–32 — +31</td><td>0</td></tr>
<tr><td>G</td><td>–32 — +31</td><td>0</td></tr>
<tr><td>B</td><td>–32 — +31</td><td>0</td></tr>
</table>
</td>
</tr>
<tr>
<td>Adjustment of SUB BRIGHT</td>
<td>Remote control unit</td>
<td></td>
<td>3. BRIGHT</td>
<td>
Notes:
• Proceed to the following adjustment after having completed the adjustments of LOW LIGHT WHITE BALANCE and HIGH LIGHT WHITE BALANCE.
• Set PICTURE MODE (VSM) to “BRIGHT”.

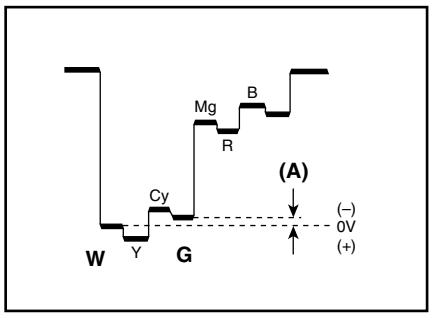
1. Receive a broadcast.
2. Select 2. VC from the SERVICE MENU.
3. Select 3. BRIGHT with the MENU ▽/△ key.
4. Set the initial setting value with the MENU ◁/▷ key.
5. If the brightness is not best with the initial setting value, make fine adjustment until you get the best brightness.
6. Press the DISPLAY key twice to return to the normal screen.
</td>
</tr>
<tr>
<td>Adjustment of SUB CONTRAST</td>
<td>Remote control unit</td>
<td></td>
<td>4. CONT</td>
<td>
Notes:
• Proceed to the following adjustment after having completed the adjustment of SUB BRIGHT.
• Set PICTURE MODE (VSM) to “BRIGHT”.

1. Receive a broadcast.
2. Select 2. VC from the SERVICE MENU.
3. Select 4. CONT with the MENU ▽/△ key.
4. Set the initial setting value with the MENU ◁/▷ key.
5. If the contrast is not best with the initial setting value, make fine adjustment until you get the best contrast.
6. Press the DISPLAY key twice to return to the normal screen.
</td>
</tr>
</table>

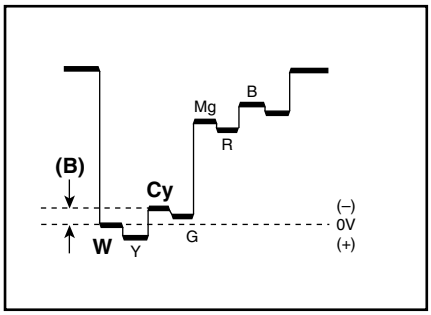




Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOR-I	**Remote control unit**		**5. COLOR**	**[Method of adjustment without measuring instrument]** **Notes:** • Proceed to the following adjustment after having completed the adjustment of SUB CONT. • Set PICTURE MODE (VSM) to "BRIGHT". **– PAL COLOR –** 1. Receive a PAL broadcast. 2. Select **2. VC** from the SERVICE MENU. 3. Select **5. COLOR** with the MENU ▽/△ key. 4. Set the initial setting value for PAL COLOR with the MENU ◁/▷ key. 5. If the color is not best with the initial setting value, make fine adjustment until you get the best color. 6. Press the DISPLAY key twice to return to the normal screen. **– SECAM COLOR –** 7. Receive a SECAM broadcast. 8. Press the COLOR SYSTEM button on the remote control unit to select the SECAM color system. 9. Make fine adjustment of SECAM COLOR in the same way as for "PAL COLOR". **– NTSC 3.58 COLOR –** 10. Receive a NTSC 3.58MHz broadcast. 11. Press the COLOR SYSTEM button on the remote control unit to select the NTSC 3.58 color system. 12. Make similar fine adjustment of NTSC 3.58 COLOR in the same way as for "PAL COLOR". **– NTSC 4.43 COLOR –** When adjustment is done for NTSC 3.58 COLOR, appropriate values are automatically set for NTSC 4.43 COLOR.
Adjustment of SUB COLOR-II	**Signal generator** **Oscilloscope** **Remote control unit**	**TP-47G TP-E (⏚) [CRT SOCKET PWB]**	**5. COLOR**	**[Method of adjustment using measuring instrument]** **Notes:** • Proceed to the following adjustment after having completed the adjustment of SUB CONT. • Set PICTURE MODE (VSM) to "BRIGHT". **– PAL COLOR –** 1. Receive a PAL color bar signal (full field color bar 75% white). 2. Select **2. VC** from the SERVICE MENU. 3. Select **5. COLOR** with the MENU ▽/△ key. 4. Set the initial setting value of PAL COLOR with the MENU ◁/▷ key. 5. Connect the oscilloscope between TP-47G and TP-E. 6. Adjust PAL COLOR to set the value **(A)** in the figure to **+14V (V_{W-G})**. **– SECAM COLOR –** 7. Receive a SECAM color bar signal (full field color bar 75% white). 8. Press the COLOR SYSTEM button on the remote control unit to select the SECAM color system. 9. Set the initial setting value of SECAM COLOR with the MENU ◁/▷ key. 10. Adjust SECAM COLOR to set the value **(A)** in the figure to **-6V (V_{W-G})**. **– NTSC 3.58 COLOR –** 11. Receive a NTSC 3.58 color bar signal (full field color bar 75% white). 12. Press the COLOR SYSTEM button on the remote control unit to select the NTSC 3.58 color system. 13. Set the initial setting value of NTSC 3.58 COLOR with the MENU ◁/▷ key. 14. Adjust NTSC 3.58 COLOR to set the value **(A)** in the figure to **+3V (V_{W-G})**. **– NTSC 4.43 COLOR –** When adjustment is done for NTSC 3.58 COLOR, appropriate values are automatically set for NTSC 4.43 COLOR.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB TINT-I	**Signal generator** **Remote control unit**		**6. TINT**	**[Method of adjustment without measuring instrument]** **Notes:** • Proceed to the following adjustment after having completed the adjustment of SUB CONT. • Set PICTURE MODE (VSM) to “BRIGHT”. **– NTSC 3.58 TINT –** 1. Receive a NTSC 3.58 color bar signal (full field color bar 75% white). 2. Press the COLOR SYSTEM button on the remote control unit to select the NTSC 3.58 color system. 3. Select **2. VC** from the SERVICE MENU. 4. Select **6. TINT** with the MENU ▽/△ key. 5. Set the initial setting value of NTSC 3.58 with the MENU ◁/▷ key. 6. If you cannot get the best tint with the initial setting value, make fine adjustment until you get the best tint. 7. Press the DISPLAY key twice to return to the normal screen. **– NTSC 4.43 TINT –** When adjustment is done for NTSC 3.58 TINT, appropriate values are automatically set for NTSC 4.43 TINT.
Adjustment of SUB TINT-II	**Signal generator** **Oscilloscope** **Remote control unit**	**TP-47G** **TP-E (⏚)** **[CRT SOCKET PWB]**	**6. TINT**	**[Method of adjustment using measuring instrument]** **Notes:** • Proceed to the following adjustment after having completed the adjustment of SUB CONT. • Set PICTURE MODE (VSM) to “BRIGHT”. **– NTSC 3.58 TINT –** 1. Receive a NTSC 3.58 color bar signal (full field color bar 75% white). 2. Press the COLOR SYSTEM button on the remote control unit to select the NTSC 3.58 color system. 3. Select **2. VC** from the SERVICE MENU. 4. Select **6. TINT** with the MENU ▽/△ key. 5. Set the initial setting value of NTSC 3.58 with the MENU ◁/▷ key. 6. Connect the oscilloscope between TP-47G and TP-E. 7. Adjust NTSC 3.58 TINT to set the value **(B)** in the figure to **+1V (V_{W-Cy})**. 8. Press the DISPLAY key twice to return to the normal screen. **– NTSC 4.43 TINT –** When adjustment is done for NTSC 3.58 TINT, appropriate values are automatically set for NTSC 4.43 TINT.



DEFLECTION CIRCUIT ADJUSTMENTS

The setting (adjustment) using the remote control unit is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

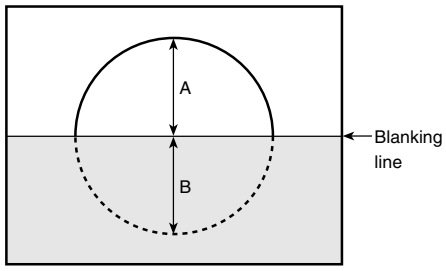
Note:
Proceed to the following adjustment after having completed the adjustments of SUB BRIGHT and SUB PICTURE.

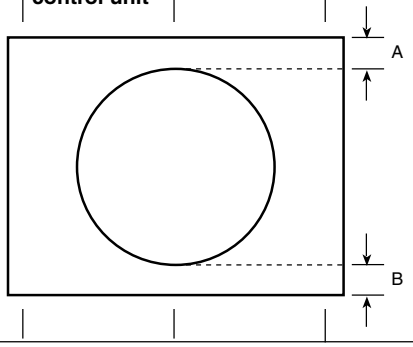
[SUB MENU 3. DEF]

Setting (Adjustment) item	Variable range	Initial setting value				
		4:3		COMPRESS(16:9)		COMPONENT DVD (50Hz)
		50Hz	60Hz	50Hz	60Hz	
1. VER. SLOPE	–32 — +31	+2	0	0	0	—
2. VER. HEIGHT	–32 — +31	+31	0	–26	–29	—
3. VER. POSITION	–32 — +31	–3	–1	–3	+2	—
4. VER. SCURVE	–32 — +31	–10	0	–10	0	—
5. HOR. POSITION	–32 — +31	0	+7	0	+7	+7
6. HOR. WIDTH	–32 — +31	+11	–1	+11	–1	—
7. EW-PIN	–32 — +31	–12	–1	–13	–12	—
8. EW-TRAPEZ	–32 — +31	–4	0	0	–1	—
9. UP CORNER	–32 — +31	–20	0	0	0	—
10. DW CORNER	–32 — +31	–19	0	0	0	—
11. HOR. PARALL	–32 — +31	0	0	0	0	—
12. HOR. BOW	–32 — +31	0	0	0	0	—
13. V.ZOOM	–32 — +31	–1	–1	+14	+14	—

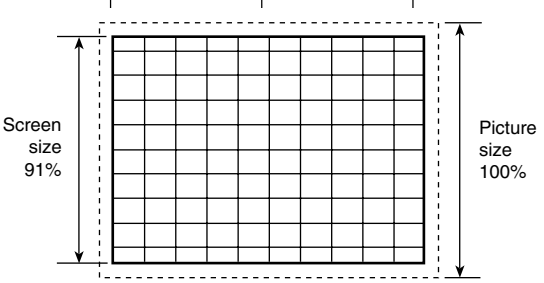
[COMPRESS (16:9) : OFF, fv: 50Hz mode]

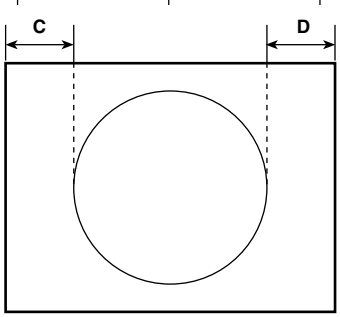
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V. SLOPE	**Signal generator** **Remote control unit**		**1. VER. SLOPE**	1. Receive a PAL circle pattern signal of vertical frequency 50Hz. 2. Select **3. DEF** from the SERVICE MENU. 3. Select **1. VER. SLOPE** with the MENU ▽/△ key. 4. Set the initial setting value of **1. VER. SLOPE** with the MENU ◁/▷ key. 5. Adjust **1. VER. SLOPE** to make "**A = B**" with the MENU ◁/▷ key.
Adjustment of V. POSITION	**Signal generator** **Remote control unit**		**3. VER. POSITION**	6. Select **3. VER. POSITION** with the MENU ▽/△ key. 7. Set the initial setting value of **3. VER. POSITION** with the MENU ◁/▷ key. 8. Adjust **3. VER. POSITION** to make "**A = B**" with the MENU ◁/▷ key. (to be continued)

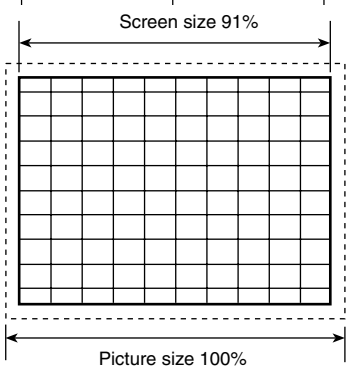




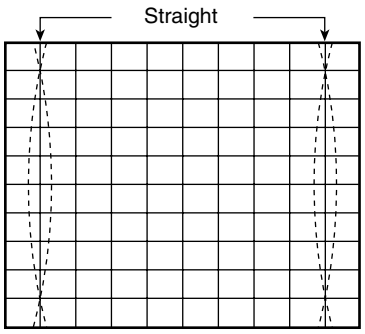
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V. HEIGHT	**Signal generator** **Remote control unit**		**2. VER. HEIGHT** **13. V. ZOOM**	9. Receive a PAL cross-hatch signal. 10. Select **2. VER. HEIGHT** with the MENU ▽/△ key. 11. Set the initial setting value of **2. VER. HEIGHT** with the MENU ◁/▷ key. 12. Select **13. V. ZOOM** with the MENU ▽/△ key. 13. Set the initial setting value of **13. V. ZOOM** with the MENU ◁/▷ key. 14. Adjust **13. V. ZOOM** and make the vertical screen size 91% of the picture size with the MENU ◁/▷ key.
Adjustment of H. POSITION	**Signal generator** **Remote control unit**		**5. HOR. POSITION**	15. Receive a PAL circle pattern signal. 16. Select **5. HOR. POSITION** with the MENU ▽/△ key. 17. Set the initial setting value of **5. HOR. POSITION** with the MENU ◁/▷ key. 18. Adjust **5. HOR POSITION** to make "**C=D**" with the MENU ◁/▷ key.
Adjustment of H. WIDTH	**Signal generator** **Remote control unit**		**6. HOR. WIDTH**	19. Receive a PAL cross-hatch signal. 20. Select **6. HOR. WIDTH** with the MENU ▽/△ key. 21. Set the initial setting value of **6. HOR. WIDTH** with the MENU ◁/▷ key. 22. Adjust **6. HOR. WIDTH** and make the horizontal screen size 91% of the picture size with the MENU ◁/▷ key. (to be continued)

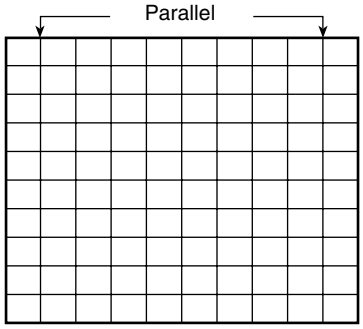


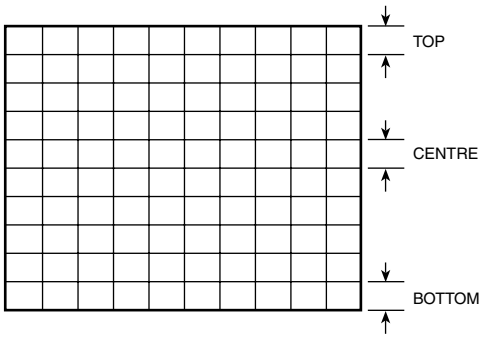


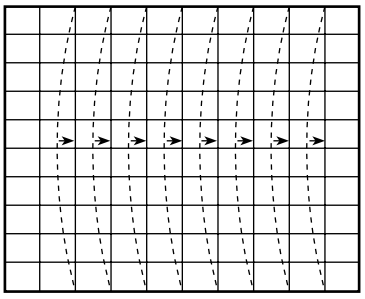


Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SIDE PIN	**Signal generator** **Remote control unit**		**7. EW-PIN**	23. Select **7. EW-PIN** with the MENU ▽/△ key. 24. Set the initial setting value of **7. EW-PIN** with the MENU ◁/▷ key. 25. Adjust **7. EW-PIN** so that the first vertical lines at the left and right edges on the screen are straight.
Adjustment of TRAPEZIUM	**Signal generator** **Remote control unit**		**8. EW-TRAPEZ**	26. Select **8. EW-TRAPEZ** with the MENU ▽/△ key. 27. Set the initial setting value of **8. EW-TRAPEZ** with the MENU ◁/▷ key. 28. Adjust **8. EW-TRAPEZ** so that the vertical lines at the left and right edges on the screen are in parallel.
Adjustment of V.S-CURVE	**Signal generator** **Remote control unit**		**4. VER. SCURVE**	29. Select **4. VER. SCURVE** with the MENU ▽/△ key. 30. Set the initial setting value of **4. VER. SCURVE** with the MENU ◁/▷ key. 31. Adjust **4. VER. SCURVE** so that the spaces of each line on TOP, CENTRE and BOTTOM become uniform. (to be continued)



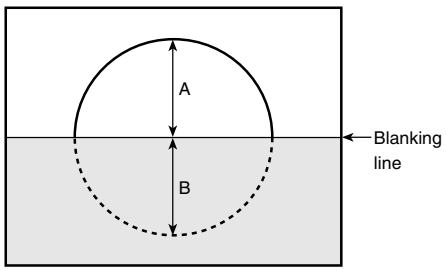


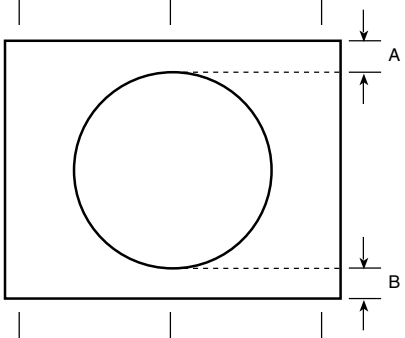


Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of CORNER	**Signal generator** **Remote control unit**		**9. UP CORNER** **10. DW CORNER**	32. Select **9. UP CORNER** with the MENU ▽/△ key. 33. Set the initial setting value of **9. UP CORNER** with the MENU ◁/▷ key. 34. Select **10. DW CORNER** with the MENU ▽/△ key. 35. Set the initial setting value of **10. DW CORNER** with the MENU ◁/▷ key. 36. Adjust **9. UP CORNER** and **10. DW CORNER** so that the vertical lines at the four corners on the screen are straight.
Adjustment of H. PARALLEL	**Signal generator** **Remote control unit**		**11. HOR. PARALL**	37. Select **11. HOR. PARALL** with the MENU ▽/△ key. 38. Set the initial setting value of **11. HOR. PARALL** with the MENU ◁/▷ key. 39. Adjust **11. HOR. PARALL** to optimize the parallelogram distortion.
Adjustment of H. BOW	**Signal generator** **Remote control unit** Straight 		**12. HOR. BOW**	40. Select **12. HOR. BOW** with the MENU ▽/△ key. 41. Set the initial setting value of **12. HOR. BOW** with the MENU ◁/▷ key. 42. Adjust **12. HOR. BOW** to optimize the horizontal arc distortion. 43. Press the DISPLAY key twice to return to the normal screen.

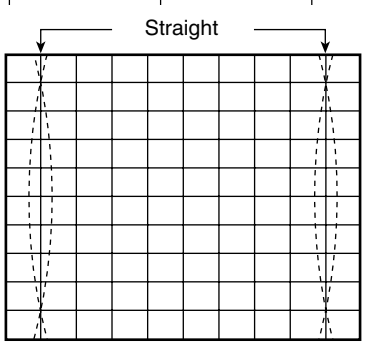
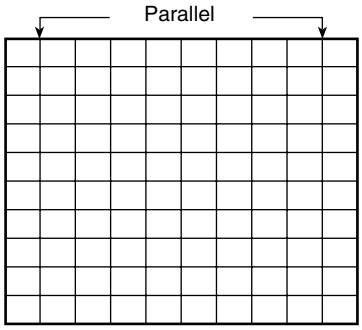
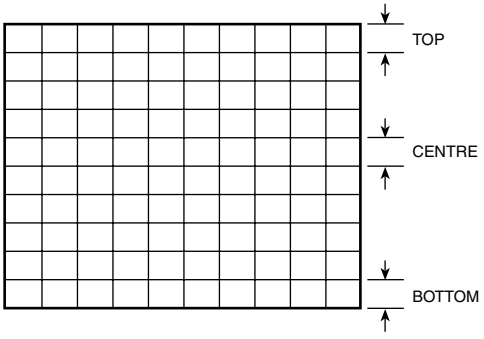
[COMPRESS (16 : 9) : OFF, fv: 60Hz mode]

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V. SLOPE	**Signal generator** **Remote control unit**		**1. VER. SLOPE**	1. Receive a NTSC circle pattern signal of vertical frequency 60Hz. 2. Select **3. DEF** from the SERVICE MENU. 3. Select **1. VER. SLOPE** with the MENU ▽/△ key. 4. Set the initial setting value of **1. VER. SLOPE** with the MENU ◁/▷ key. 5. Adjust **1. VER. SLOPE** to make "**A = B**" with the MENU ◁/▷ key.
Adjustment of V. POSITION	**Signal generator** **Remote control unit**		**3. VER. POSITION**	6. Select **3. VER. POSITION** with the MENU ▽/△ key. 7. Set the initial setting value of **3. VER. POSITION** with the MENU ◁/▷ key. 8. Adjust **3. VER. POSITION** to make "**A = B**" with the MENU ◁/▷ key. (to be continued)

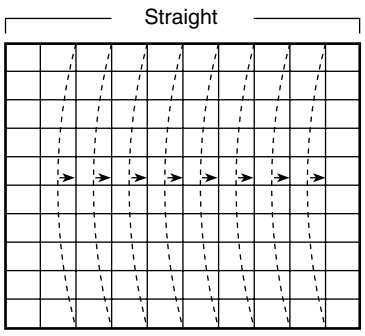




Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V. HEIGHT	**Signal generator** **Remote control unit**		**2. VER. HEIGHT** **13. V. ZOOM**	9. Receive a NTSC cross-hatch signal. 10. Select **2. VER. HEIGHT** with the MENU ▽/△ key. 11. Set the initial setting value of **2. VER. HEIGHT** with the MENU ◁/▷ key. 12. Select **13. V. ZOOM** with the MENU ▽/△ key. 13. Set the initial setting value of **13. V. ZOOM** with the MENU ◁/▷ key. 14. Adjust **13. V. ZOOM** and make the vertical screen size 91% of the picture size with the MENU ◁/▷ key.
Adjustment of H. POSITION	**Signal generator** **Remote control unit**		**5. HOR. POSITION**	15. Receive a NTSC circle pattern signal. 16. Select **5. HOR. POSITION** with the MENU ▽/△ key. 17. Set the initial setting value of **5. HOR. POSITION** with the MENU ◁/▷ key. 18. Adjust **5. HOR POSITION** to make "**C=D**" with the MENU ◁/▷ key.
Adjustment of H. WIDTH	**Signal generator** **Remote control unit**		**6. HOR. WIDTH**	19. Receive a NTSC cross-hatch signal. 20. Select **6. HOR. WIDTH** with the MENU ▽/△ key. 21. Set the initial setting value of **6. HOR. WIDTH** with the MENU ◁/▷ key. 22. Adjust **6. HOR. WIDTH** and make the horizontal screen size 91% of the picture size with the MENU ◁/▷ key. (to be continued)

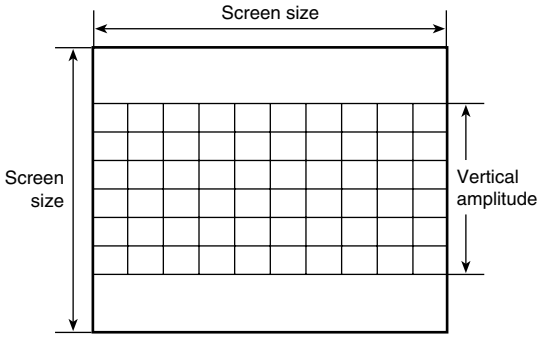
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SIDE PIN	**Signal generator** **Remote control unit** 		**7. EW-PIN**	23. Select **7. EW-PIN** with the MENU ▽/△ key. 24. Set the initial setting value of **7. EW-PIN** with the MENU ◁/▷ key. 25. Adjust **7. EW-PIN** so that the first vertical lines at the left and right edges on the screen are straight.
Adjustment of TRAPEZIUM	**Signal generator** **Remote control unit** 		**8. EW-TRAPEZ**	26. Select **8. EW-TRAPEZ** with the MENU ▽/△ key. 27. Set the initial setting value of **8. EW-TRAPEZ** with the MENU ◁/▷ key. 28. Adjust **8. EW-TRAPEZ** so that the vertical lines at the left and right edges on the screen are in parallel.
Adjustment of V.S-CURVE	**Signal generator** **Remote control unit** 		**4. VER. SCURVE**	29. Select **4. VER. SCURVE** with the MENU ▽/△ key. 30. Set the initial setting value of **4. VER. SCURVE** with the MENU ◁/▷ key. 31. Adjust **4. VER. SCURVE** so that the spaces of each line on TOP, CENTRE and BOTTOM become uniform. (to be continued)

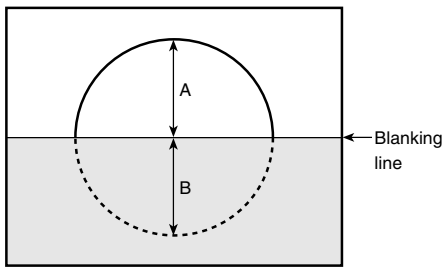
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of CORNER	**Signal generator** **Remote control unit**		**9. UP CORNER** **10. DW CORNER**	32. Select **9. UP CORNER** with the MENU ▽/△ key. 33. Set the initial setting value of **9. UP CORNER** with the MENU ◁/▷ key. 34. Select **10. DW CORNER** with the MENU ▽/△ key. 35. Set the initial setting value of **10. DW CORNER** with the MENU ◁/▷ key. 36. Adjust **9. UP CORNER** and **10. DW CORNER** so that the vertical lines at the four corners on the screen are straight.
Adjustment of H. PARALLEL	**Signal generator** **Remote control unit**		**11. HOR. PARALL**	37. Select **11. HOR. PARALL** with the MENU ▽/△ key. 38. Set the initial setting value of **11. HOR. PARALL** with the MENU ◁/▷ key. 39. Adjust **11. HOR. PARALL** to optimize the parallelogram distortion.
Adjustment of H. BOW	**Signal generator** **Remote control unit**		**12. HOR. BOW**	40. Select **12. HOR. BOW** with the MENU ▽/△ key. 41. Set the initial setting value of **12. HOR. BOW** with the MENU ◁/▷ key. 42. Adjust **12. HOR. BOW** to optimize the horizontal arc distortion. 43. Press the DISPLAY key twice to return to the normal screen.

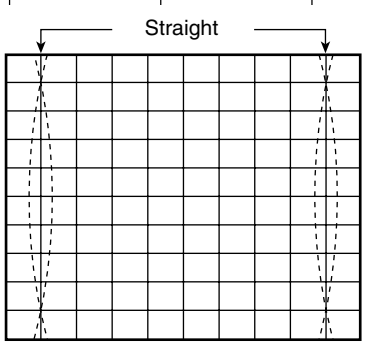
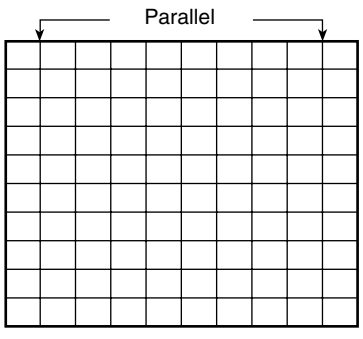


[COMPRESS (16 : 9) : ON, fv: 50Hz mode]

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V. HEIGHT	**Signal generator** **Remote control unit**		**13. V. ZOOM** **2. VER. HEIGHT**	1. Receive a PAL cross-hatch signal of vertical frequency 50Hz. 2. Select COMPRESS from the MENU and set COMPRESS to ON. 3. Select **3. DEF** from the SERVICE MENU. 4. Set the initial setting value of **13. V. ZOOM** with the MENU ◁/▷ key. 5. Select **2. VER. HEIGHT** with the MENU ▽/△ key. 6. Set the initial setting value of **2. VER. HEIGHT** with the MENU ◁/▷ key. 7. Adjust **2. VER. HEIGHT** to set the vertical amplitude of the image to 305mm.
Adjustment of V. SLOPE	**Signal generator** **Remote control unit**		**1. VER. SLOPE**	8. Receive a PAL circle pattern signal of vertical frequency 50Hz. 9. Select **3. DEF** from the SERVICE MENU. 10. Select **1. VER. SLOPE** with the MENU ▽/△ key. 11. Set the initial setting value of **1. VER. SLOPE** with the MENU ◁/▷ key. 12. Adjust **1. VER. SLOPE** to make "**A = B**" with the MENU ◁/▷ key. (to be continued)

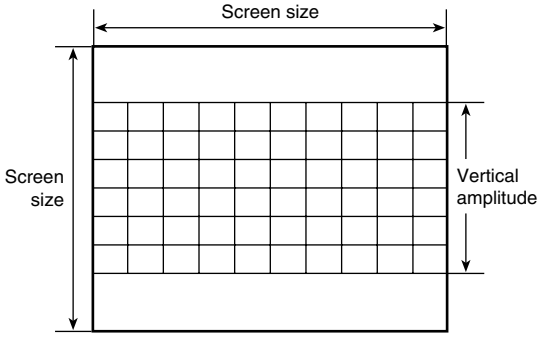


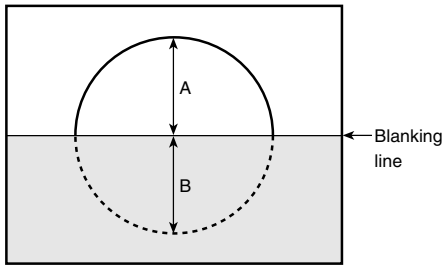


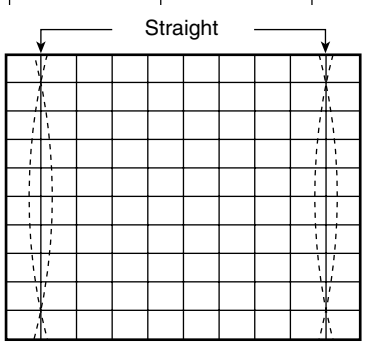
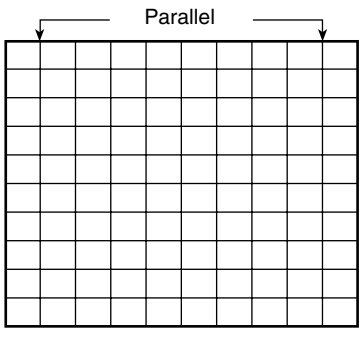
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SIDE PIN	**Signal generator** **Remote control unit** 		**7. EW-PIN**	13. Receive a PAL cross-hatch signal. 14 Select **7. EW-PIN** with the MENU ▽/△ key. 15. Set the initial setting value of **7. EW-PIN** with the MENU ◁/▷ key. 16. Adjust **7. EW-PIN** so that the first vertical lines at the left and right edges on the screen are straight.
Adjustment of TRAPEZIUM	**Signal generator** **Remote control unit** 		**8. EW-TRAPEZ**	17. Select **8. EW-TRAPEZ** with the MENU ▽/△ key. 18. Set the initial setting value of **8. EW-TRAPEZ** with the MENU ◁/▷ key. 19. Adjust **8. EW-TRAPEZ** so that the vertical lines at the left and right edges on the screen are in parallel.
Adjustment of CORNER	**Signal generator** **Remote control unit**		**9. UP CORNER** **10. DW CORNER**	20. Select **9. UP CORNER** with the MENU ▽/△ key. 21. Set the initial setting value of **9. UP CORNER** with the MENU ◁/▷ key. 22. Select **10. DW CORNER** with the MENU ▽/△ key. 23. Set the initial setting value of **10. DW CORNER** with the MENU ◁/▷ key. 24. Adjust **9. UP CORNER** and **10. DW CORNER** so that the vertical lines at the four corners on the screen are straight. 25. Press the DISPLAY key twice to return to the normal screen.

[COMPRESS (16 : 9) : ON, fv: 60Hz mode]

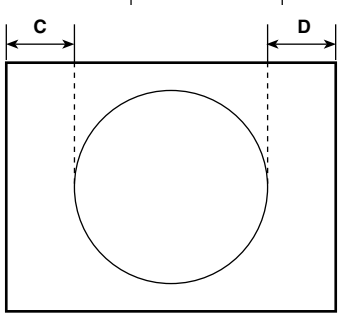
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V. HEIGHT	**Signal generator** **Remote control unit**		**13. V. ZOOM** **2. VER. HEIGHT**	1. Receive a NTSC cross-hatch signal of vertical frequency 60Hz. 2. Select COMPRESS from the MENU and set COMPRESS to ON. 3. Select **3. DEF** from the SERVICE MENU. 4. Set the initial setting value of **13. V. ZOOM** with the MENU ◁/▷ key. 5. Select **2. VER. HEIGHT** with the MENU ▽/△ key. 6. Set the initial setting value of **2. VER. HEIGHT** with the MENU ◁/▷ key. 7. Adjust **2. VER. HEIGHT** to set the vertical amplitude of the image to 305mm.
Adjustment of V. SLOPE	**Signal generator** **Remote control unit**		**1. VER. SLOPE**	8. Receive a NTSC circle pattern signal of vertical frequency 60Hz. 9. Select **3. DEF** from the SERVICE MENU. 10. Select **1. VER. SLOPE** with the MENU ▽/△ key. 11. Set the initial setting value of **1. VER. SLOPE** with the MENU ◁/▷ key. 12. Adjust **1. VER. SLOPE** to make "**A = B**" with the MENU ◁/▷ key. (to be continued)





Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SIDE PIN	**Signal generator** **Remote control unit** 		**7. EW-PIN**	13. Receive a NTSC cross-hatch signal. 14 Select **7. EW-PIN** with the MENU ▽/△ key. 15. Set the initial setting value of **7. EW-PIN** with the MENU ◁/▷ key. 16. Adjust **7. EW-PIN** so that the first vertical lines at the left and right edges on the screen are straight.
Adjustment of TRAPEZIUM	**Signal generator** **Remote control unit** 		**8. EW-TRAPEZ**	17. Select **8. EW-TRAPEZ** with the MENU ▽/△ key. 18. Set the initial setting value of **8. EW-TRAPEZ** with the MENU ◁/▷ key. 19. Adjust **8. EW-TRAPEZ** so that the vertical lines at the left and right edges on the screen are in parallel.
Adjustment of CORNER	**Signal generator** **Remote control unit**		**9. UP CORNER** **10. DW CORNER**	20. Select **9. UP CORNER** with the MENU ▽/△ key. 21. Set the initial setting value of **9. UP CORNER** with the MENU ◁/▷ key. 22. Select **10. DW CORNER** with the MENU ▽/△ key. 23. Set the initial setting value of **10. DW CORNER** with the MENU ◁/▷ key. 24. Adjust **9. UP CORNER** and **10. DW CORNER** so that the vertical lines at the four corners on the screen are straight. 25. Press the DISPLAY key twice to return to the normal screen.

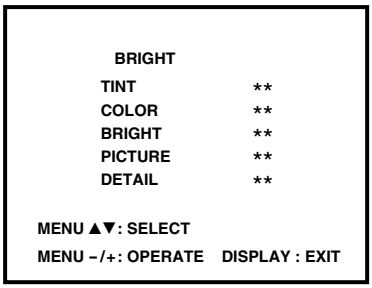
[VIDEO - 2 SET : COMPONENT, fv: 50/60Hz mode]

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of H. POSITION	**Signal generator** **Remote control unit** 		**5. HOR. POSITION**	1. Receive a PAL circle pattern signal to VIDEO-2 terminal. 2. Select VIDEO-2 SET from the MENU and set VIDEO-2 SET to COMPONENT. 3. Select **3. DEF** from the SERVICE MENU. 4. Select **5. HOR. POSITION** with the MENU ▽/△ key. 5. Set the initial setting value of **5. HOR. POSITION** with the MENU ◁/▷ key. 6 Adjust **5. HOR POSITION** to make "**C=D**" with the MENU ◁/▷ key. 7. Press the DISPLAY key twice to return to the normal screen.

VSM PRESET SETTING

Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET	**Remote control unit**		**1. TINT** **2. COLOR** **3. BRIGHT** **4. PICTURE** **5. DETAIL**	1. Select **4. VSM PRESET** from the SERVICE MENU. 2. Select BRIGHT with the PICTURE MODE key. 3. Adjust the MENU ▽/△ key and MENU ◁/▷ key to reset the set values of **1. TINT – 5. DETAIL** to the values shown in the table. 4. Respectively select the VSM PRESET mode for SOFT and STANDARD, and make similar adjustment as in 3 above. 5. Press the DISPLAY key twice to return to the normal screen.

SUB MENU 4. VSM PRESET



[Setting Values for SUB MENU 4. VSM PRESET]

VSM preset mode / VSM Setting item	BRIGHT	STANDARD	SOFT
1. TINT SETTING VALUE	15	←	←
2. COLOR SETTING VALUE	15	←	←
3. BRIGHT SETTING VALUE	15	←	←
4. PICTURE SETTING VALUE	30	15	11
5. DETAIL SETTING VALUE	15	←	7

PRESET SETTING

● Do not adjust 5. PRESET in the SERVICE MENU as it requires no adjustment.

[SUB MENU 5. PRESET]

	Setting item	Variable range	Initial setting value
1	PSNS	0/1	0
2	ACL	0/1	0
3	MUS	0/1	0
4	MAT	0/1	0
5	FCO	0/1	0
6	BPS	0/1	0
7	IFLH	0/1	0
8	VID	0/1	0
9	STM	0/1	0
10	AFCW	0/1	0
11	VSW	0/1	0
12	FFI	0/1	0
13	AGC	00/01/10/11	01
14	CL	50 – 95	50
15	AKB	0/1	0
16	HBL	0/1	0
17	BKS	0/1	1
18	READ STATUS	—	—
19	VNR	00 – 63	25
20	PEAK	0 – 3	1
21	IVG	0/1	1
22	WPL	0 – F	5
23	SOFT CLIPPER	0 – 3	0
24	IF PLL OFFSET	0 – 63	32
25	OVERSHOOT	0 – 3	3
26	HCO	0/1	0
27	HP2	0/1	0
28	AI VOLUME ADN	00/01/10/11	10
31	CCCLOOP	0 – 4	0

AUDIO ADJUSTMENT

● Do not adjust 6. A2NICAM (1.ERROR LIMIT, 2.A2 ID THR, 3.SOUND SYSTEM) in the SERVICE MENU as it requires no adjustment.

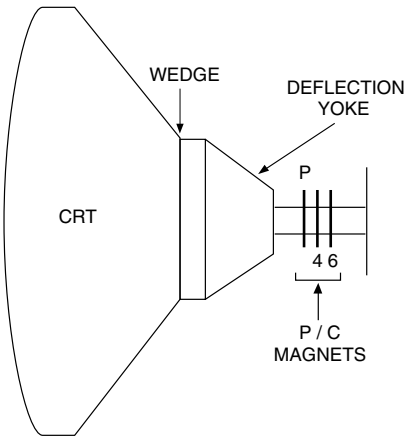
[SUB MENU 6. A2NICAM]

Setting item		Variable range	Initial setting value (fixed)
1. ERROR LIMIT	**(Do not adjust.)**	000H – FF0H	100H
2. A2 ID THR	**(Do not adjust.)**	00H – FFH	0AH
3. SOUND SYSTEM	**(Do not adjust.)**	——	——

PURITY ADJUSTMENT

Note: The final adjustment of CONVERGENCE must be done after the FOCUS adjustment. (CONVERGENCE is changed by FOCUS adjustment.)
When makes difference by FOCUS adjustment, should be reconfirming PURITY adjustment.

1. Demagnetize CRT with the demagnetizer.
2. Loosen the retainer screw of the deflection yoke.
3. Remove the wedges.
4. Input a green raster signal from the signal generator, and turn the screen to green raster.
5. Move the deflection yoke backward.
6. Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig. 2)
7. Adjust the gap between two lugs so that the GREEN RASTER will come into the centre of the screen. (Fig. 3)
8. Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.
9. Insert the wedge to the top side of the deflection yoke so that it will not move.
10. Input a crosshatch signal.
11. Verify that the screen is horizontal.
12. Input red and blue raster signals, and make sure that purity is properly adjusted.



• P/C MAGNETS

P : PURITY MAGNET
4 : 4 POLES (convergence magnets)
6 : 6 POLES (convergence magnets)

Fig. 1

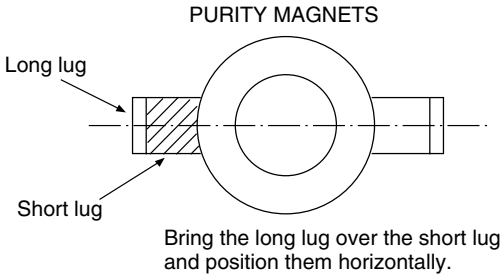


Fig. 2

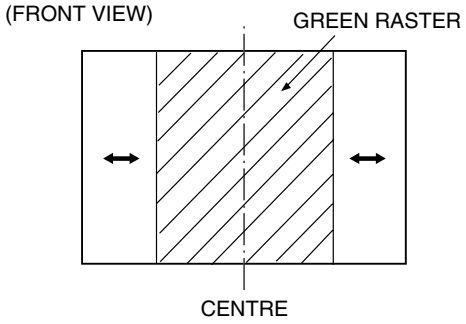


Fig. 3

CONVERGENCE ADJUSTMENTS

STATIC CONVERGENCE ADJUSTMENT

1. Input a crosshatch signal.
2. Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen (Fig. 4) and turn them to magenta (red/blue).
3. Using 6-pole convergence magnets, overlap the magenta(red/blue) and green lines in the centre of the screen and turn them to white.
4. Repeat 2 and 3 above, and make best convergence.

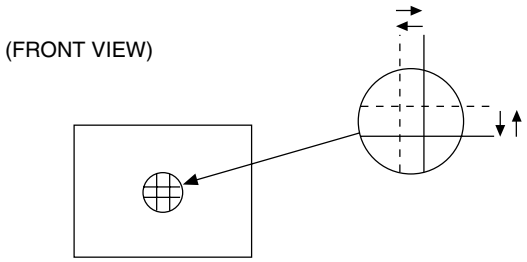


Fig. 4

DYNAMIC CONVERGENCE ADJUSTMENT

1. Using the Y_H VR on the deflection yoke, match the Y_H (CROSS). (Fig. 5 and 8)
2. Using the Y_V VR on the deflection yoke, match the Y_V. (Fig. 6 and 8)
3. Repeat the steps 1 and 2, obtain an optimum convergence.
4. Differential coil ADJUSTMENT.
   In case where the horizontal lines of red and blue around the center of both sides of the picture as shown in Fig. 7, adjust the X_V difference by using the differential coil on the top of the deflection yoke (Fig. 8) so as to minimize the X_V difference.

- After adjustment, fix the wedge at the original position.
  Fasten the retainer screw of the deflection yoke.
  Fix the P/C magnet with glue.

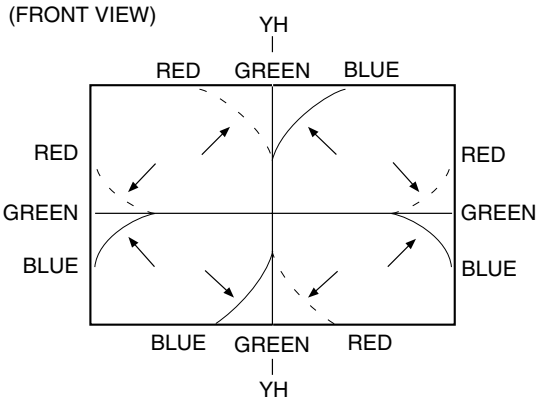


Fig. 5

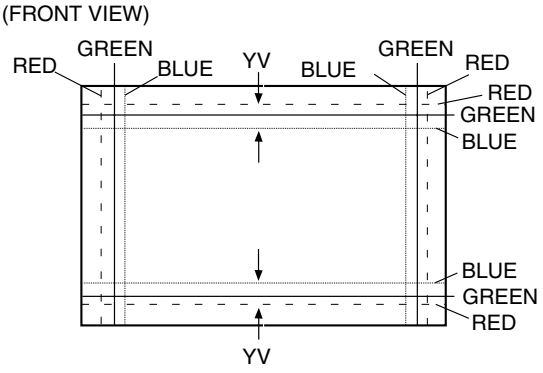


Fig. 6

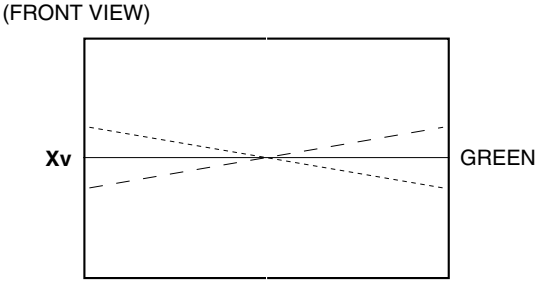


Fig. 7

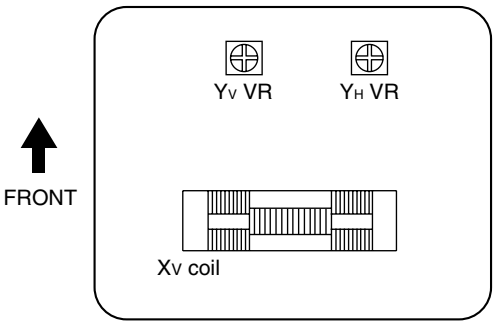


Fig. 8

SELF-CHECK FUNCTIONS

1. Outline

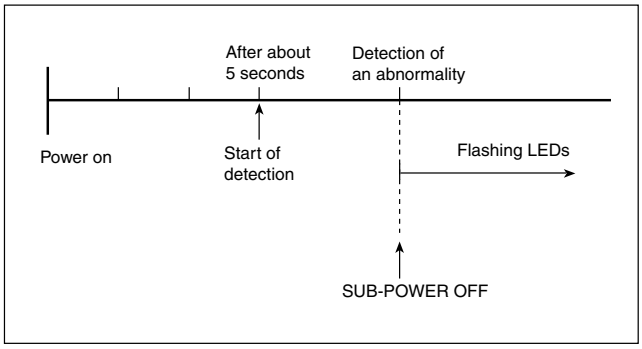
This model has self-check functions given below.When an abnormality has been detected,the SUB POWER is turned off and both ECO and ON TIMER LEDs flash to inform of the failure.An abnormality is detected by the signal input state of the control line connected to the microcomputer.

2. Self check items

Check item	Details of detection	Method of detection	State of abnormality
Over-current protection	An over-current on the low B line is detected.	The main microcomputer detects the possible abnormality at 30-msec.intervals and judges the results in every 16 time. Of the 16 times, if NG is detected more than 9 times, it is judged that there is an abnormality.	When an abnormality has been detected, the SUB-POWER is turned off. While the SUB-POWER is being turned off, the POWER key on the remote control unit is not operational until the power cord is taken out and put in again.
CRT NECK protection	Operation of CRT NECK protection circuit.	DITTO	DITTO

3. Self check indicating function

When an abnormality has been detected at about 5 seconds after the power is turned on,the SUB POWER is turned off immediately and the LEDs flash.



[Indication by the LEDs]

Item	LEDs flashing intervals	Priority of detection
① Over-current protection	At 0.2-second intervals	1
② CRT NECK protection	At 1-second intervals	2

Note: In case of ① + ②, the item ① is indicated.

SERVICE NOTE :

JVC
VICTOR COMPANY OF JAPAN, LIMITED
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AV29WS3M-H #4
Printed in Japan
0212 WPC

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines --- in the Parts No. columns will not be supplied .
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied .

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	CH CAP.	Chip Capacitor
HV R	High Voltage Resistor	HV CAP.	High Voltage Capacitor
MF R	Metal Film Resistor	MF CAP.	Metalized Film Capacitor
MG R	Metal Glazed Resistor	MM CAP.	Metalized Mylar Capacitor
MP R	Metal Plate Resistor	MP CAP.	Metalized Polystyrol Capacitor
OM R	Metal Oxide Film Resistor	PP CAP.	Polypropylene Capacitor
CMF R	Coating Metal Film Resistor	PS CAP.	Polystyrol Capacitor
UNF R	Non-Flammable Resistor	TF CAP.	Thin Film Capacitor
CH V R	Chip Variable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH MG R	Chip Metal Glazed Resistor	TAN. CAP.	Tantalum Capacitor
COMP. R	Composition Resistor	CH C CAP.	Chip Ceramic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
		CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

RESISTORS									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% 0%

CONTENTS

USING P.W. BOARD & REMOTE CONTROL UNIT 43
EXPLODED VIEW PARTS LIST -Ⅰ 43
EXPLODED VIEW -Ⅰ 43
EXPLODED VIEW PARTS LIST -Ⅱ 44
EXPLODED VIEW -Ⅱ 45

PRINTED WIRING BOARD PARTS LIST
MAIN PW BOARD ASS'Y 46
CRT SOCKET PW BOARD ASS'Y 50
FRONT CONTROL PW BOARD ASS'Y 52

REMOTE CONTROL UNIT PARTS LIST 53

PACKING 54

PACKING PARTS LIST 54

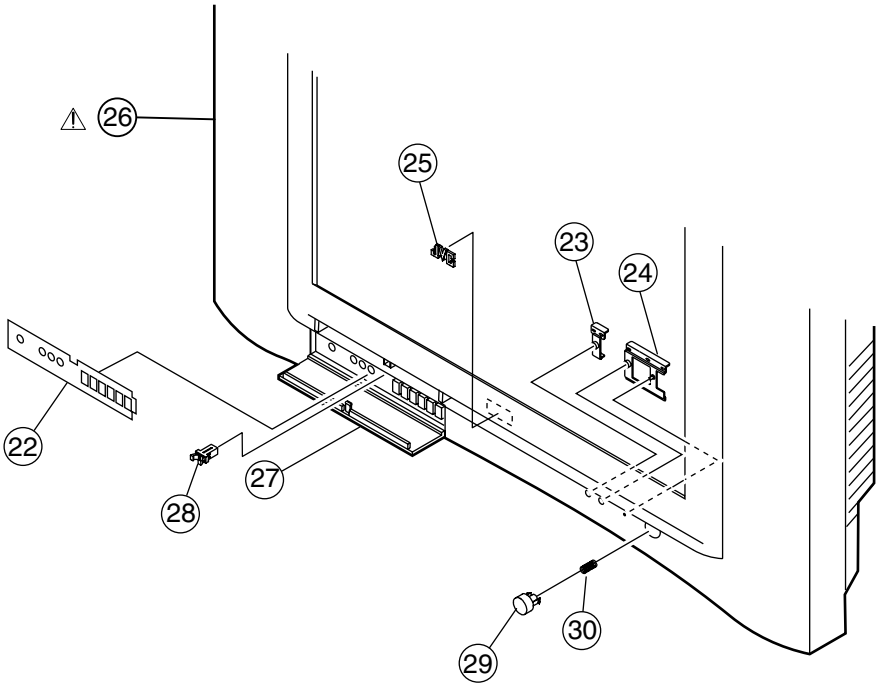
USING P.W. BOARD & REMOTE CONTROL UNIT

P.W.B ASS'Y / Model	AV-29WS3/M
MAIN PWB	SCH-1107A-H2
CRT SOCKET PWB	SCH-3005A-H2
FRONT CONTROL PWB	SCH-8004A-H2
REMOTE CONTROL UNIT	RM-C1010-1H

EXPLODED VIEW PARTS LIST -I

⚠	Ref.No.	Part No.	Part Name	Description	Local
	22	GG20028-001A-H	OPERATION SHEET		
	23	GG30050-001B-H	REMOCON LENS		
	24	GG30049-001B-H	LED LENS		
	25	LC41037-003A-H	JVC MARK		
⚠	26	GG10189-001A-H	FRONT CABINET ASS'Y	Inc. No. 27, 28, 29, 30	
	27	GG20027-001B-H	DOOR		
	28	CM48229-00A-C	DOOR LATCH		
	29	GG30048-001B-H	POWER KNOB		
	30	CM35235-003-H	SPRING		

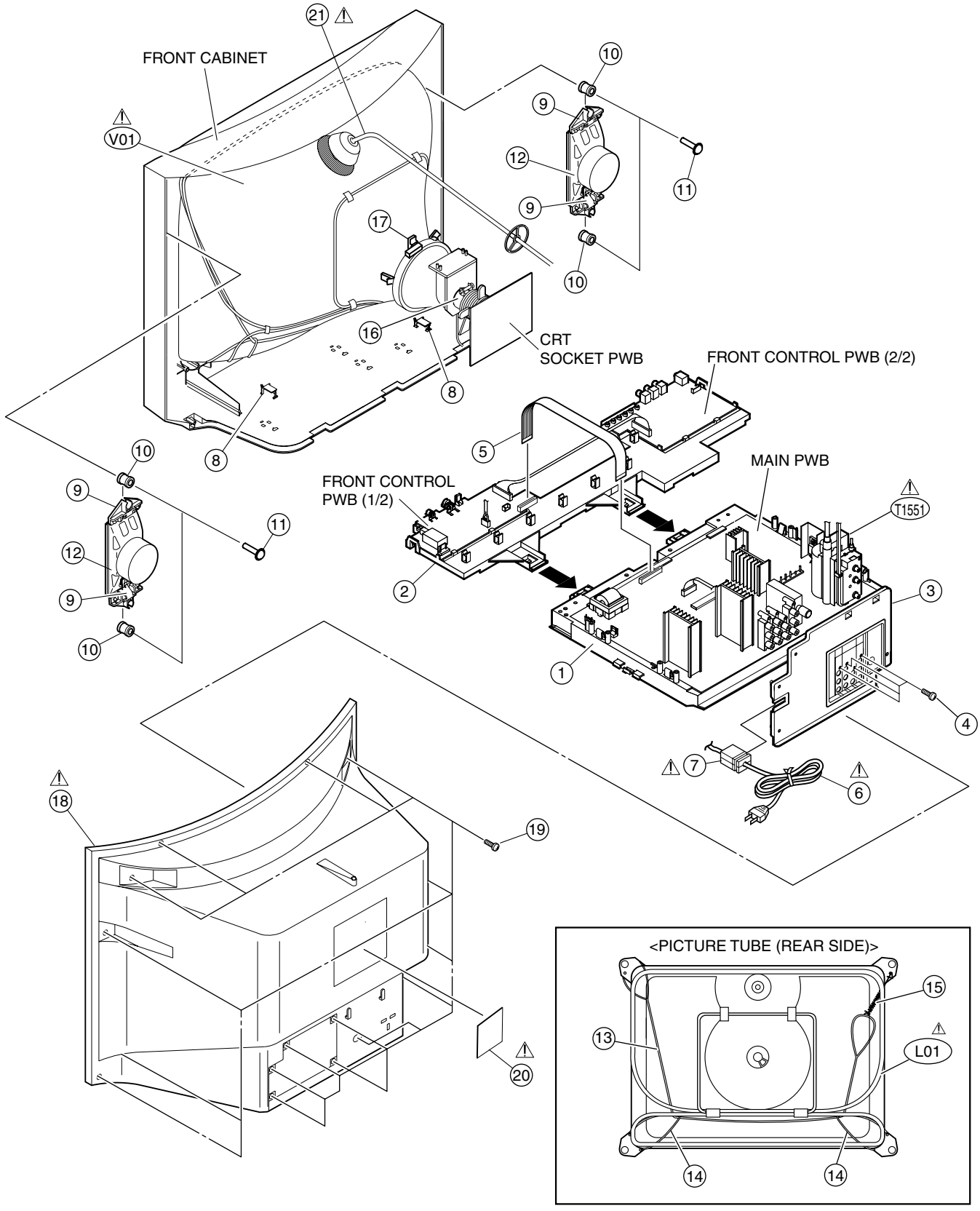
EXPLODED VIEW -I



EXPLODED VIEW PARTS LIST -Ⅱ

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	V01	A68QCU257X75K	PICTURE TUBE (ITC)	Inc. DEF YOKE	
⚠	L01	QQW0150-001	DEG COIL		
⚠	T1551	QQH0139-001	FBT	Not including ANODE WIRE ASS'Y	
	1	LC11061-001A-H	CHASSIS BASE		
	2	LC11062-001D-H	CONTROL BASE		
	3	LC11064-001B-H	AV TERMINAL BOARD		
	4	QYSBSF3012M	TAPPING SCREW	(X4)	
	5	CHFD125-18BD	FFC WIRE		
⚠	6	QMPR340-165-K2	POWER CORD		
⚠	7	CM23167-A01-H	POWER CORD CLAMP		
	8	LC30103-001B-H	CHASSIS ADAPTER	(X2)	
	9	GG20023-001B-H	SP HOLDER	(X4)	
	10	LC40226-003A-H	SPACER	(X4)	
	11	LC40317-002A-H	TAPPING SCREW	(X4)	
	12	QAS0114-001	SPEAKER	(X2)	
	13	WJY0018-001A	BRAIDED ASS'Y		
	14	CHGB0017-0C	BRAIDED ASS'Y (SUB)	(X2)	
	15	A48457-3-H	SPRING		
	16	CE42568-00A	PC MAGNET		
	17	CE40764-00A	WEDGE ASS'Y	(X4)	
⚠	18	GG10192-002B-H	REAR COVER		
	19	QYSBSFG4016Z	TAPPING SCREW	(X16)	
⚠	20	GG20024-001B-H	RATING LABEL		
⚠	21	QNZ0369-001	ANODE WIRE ASS'Y		

EXPLODED VIEW -Ⅱ



PRINTED WIRING BOARD PARTS LIST

MAIN PW BOARD ASS'Y (SCH-1107A-H2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	R1001	NRSA63J-221X	MG R	220Ω 1/16W	J
	R1002	NRSA63J-221X	MG R	220Ω 1/16W	J
	R1003	NRSA63J-392X	MG R	3.9kΩ 1/16W	J
	R1004	NRSA63J-221X	MG R	220Ω 1/16W	J
	R1005	NRSA63J-273X	MG R	27kΩ 1/16W	J
	R1006	NRSA63J-750X	MG R	75Ω 1/16W	J
	R1101	NRSA63J-100X	MG R	10Ω 1/16W	J
	R1102	NRSA63J-682X	MG R	6.8kΩ 1/16W	J
	R1103	NRSA63J-272X	MG R	2.7kΩ 1/16W	J
	R1104	NRSA63J-181X	MG R	180Ω 1/16W	J
	R1105	NRSA63J-220X	MG R	22Ω 1/16W	J
	R1106	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1107	NRSA63J-472X	MG R	4.7kΩ 1/16W	J
	R1108	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1109	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1110	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1111	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1113	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1114	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1115	NRSA63J-471X	MG R	470Ω 1/16W	J
	R1117	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1150	NRSA63J-331X	MG R	330Ω 1/16W	J
	R1151	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1152	NRSA63J-121X	MG R	120Ω 1/16W	J
	R1153	NRSA63J-122X	MG R	1.2kΩ 1/16W	J
	R1154	NRSA63J-181X	MG R	180Ω 1/16W	J
	R1301	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1302	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1303	NRSA63J-562X	MG R	5.6kΩ 1/16W	J
	R1304	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1305	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1306	NRSA63J-562X	MG R	5.6kΩ 1/16W	J
	R1307	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1308	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1309	NRSA63J-473X	MG R	47kΩ 1/16W	J
	R1310	NRSA63J-473X	MG R	47kΩ 1/16W	J
	R1311	NRSA63J-123X	MG R	12kΩ 1/16W	J
	R1317	QRL029J-101	OM R	100Ω 2W	J
	R1401	NRSA63J-123X	MG R	12kΩ 1/16W	J
	R1403	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J
	R1405	NRSA63J-682X	MG R	6.8kΩ 1/16W	J
	R1406	NRSA63J-472X	MG R	4.7kΩ 1/16W	J
	R1408	NRSA63J-682X	MG R	6.8kΩ 1/16W	J
	R1410	NRSA63J-472X	MG R	4.7kΩ 1/16W	J
	R1411	QRG01GJ-221	OM R	220Ω 1W	J
	R1412	QRE121J-1R0Y	C R	1Ω 1/2W	J
	R1413	QRX01GJ-1R2	MF R	1.2Ω 1W	J
	R1414	QRE121J-2R2Y	C R	2.2Ω 1/2W	J
	R1425	NRSA63J-153X	MG R	15kΩ 1/16W	J
	R1478	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1479	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1480	QRE121J-681Y	C R	680Ω 1/2W	J
	R1481	NRSA63J-223X	MG R	22kΩ 1/16W	J
	R1482	NRSA63J-562X	MG R	5.6kΩ 1/16W	J
	R1483	NRSA63J-823X	MG R	82kΩ 1/16W	J
	R1484	NRSA63J-562X	MG R	5.6kΩ 1/16W	J
	R1485	NRSA63J-123X	MG R	12kΩ 1/16W	J
	R1486	NRSA63J-272X	MG R	2.7kΩ 1/16W	J
	R1487	NRSA63J-333X	MG R	33kΩ 1/16W	J
	R1489	NRSA63J-122X	MG R	1.2kΩ 1/16W	J
	R1490	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1491	NRSA63J-562X	MG R	5.6kΩ 1/16W	J
	R1492	NRSA63J-822X	MG R	8.2kΩ 1/16W	J
	R1493	QRE121J-223Y	C R	22kΩ 1/2W	J
	R1494	QRL039J-330	OM R	33Ω 3W	J
	R1521	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1522	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1523	QRL039J-151	OM R	150Ω 3W	J
	R1524	QRL039J-151	OM R	150Ω 3W	J
	R1526	QRL029J-271	OM R	270Ω 2W	J
	R1527	QRL039J-103	OM R	10kΩ 3W	J
⚠	R1528	QRZ9021-1R0	F R	1Ω 1W	J

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
⚠	R1529	QRZ9021-1R0	F R	1Ω 1W	J
	R1531	NRSA63J-182X	MG R	1.8kΩ 1/16W	J
⚠	R1532	QRZ9017-4R7	F R	4.7Ω 1/4W	J
	R1541	QRE121J-124Y	C R	120kΩ 1/2W	J
	R1542	QRE121J-124Y	C R	120kΩ 1/2W	J
	R1543	QRE121J-471Y	C R	470Ω 1/2W	J
	R1545	QRE121J-220Y	C R	22Ω 1/2W	J
	R1546	QRE121J-822Y	C R	8.2kΩ 1/2W	J
⚠	R1547	QRZ9011-4R7	F R	4.7Ω 1/2W	J
	R1561	QRL029J-220	OM R	22Ω 2W	J
	R1562	QRE121J-123Y	C R	12kΩ 1/2W	J
	R1563	QRZ0056-103Z	COMP R	10kΩ 1/2W	K
	R1591	QRA14CF-1202Y	CMF R	12kΩ 1/4W	F
	R1592	QRZ0225-2R2	UNF R	2.2Ω 2W	
	R1593	NRSA02F-332X	MG R	3.3kΩ 1/10W	F
	R1594	QRE121J-183Y	C R	18kΩ 1/2W	J
	R1595	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1602	NRSA63J-271X	MG R	270Ω 1/16W	J
	R1603	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1604	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1621	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J
	R1622	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J
	R1623	NRSA63J-473X	MG R	47kΩ 1/16W	J
	R1624	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1625	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1627	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1628	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1629	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1630	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1650	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1651	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1652	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1653	NRSA63J-104X	MG R	100kΩ 1/16W	J
	R1654	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1655	NRSA63J-104X	MG R	100kΩ 1/16W	J
	R1656	QRE121J-2R2Y	C R	2.2Ω 1/2W	J
	R1657	QRE121J-2R2Y	C R	2.2Ω 1/2W	J
	R1660	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1661	NRSA63J-683X	MG R	68kΩ 1/16W	J
	R1662	NRSA63J-333X	MG R	33kΩ 1/16W	J
	R1663	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1664	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R1688	NRSA63J-273X	MG R	27kΩ 1/16W	J
	R1690	NRSA63J-104X	MG R	100kΩ 1/16W	J
	R1691	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1695	NRSA63J-153X	MG R	15kΩ 1/16W	J
	R1696	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J
	R1701	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1702	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1703	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1704	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1705	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1706	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1707	NRSA63J-472X	MG R	4.7kΩ 1/16W	J
	R1708	NRSA63J-472X	MG R	4.7kΩ 1/16W	J
	R1709	NRSA63J-472X	MG R	4.7kΩ 1/16W	J
	R1710	NRSA63J-472X	MG R	4.7kΩ 1/16W	J
	R1711	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1712	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1713	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1714	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1715	NRSA63J-101X	MG R	100Ω 1/16W	J
	R1716	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1717	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R1718	NRSA63J-221X	MG R	220Ω 1/16W	J
	R1719	NRSA63J-221X	MG R	220Ω 1/16W	J
	R1720	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R1721	NRSA63J-221X	MG R	220Ω 1/16W	J
	R1722	NRSA63J-221X	MG R	220Ω 1/16W	J
	R1723	NRSA63J-221X	MG R	220Ω 1/16W	J
	R1724	NRSA63J-221X	MG R	220Ω 1/16W	J
	R1725	NRSA63J-103X	MG R	10kΩ 1/16W	J

⚠	Symbol No.	Part No.	Part Name	Description		Local
RESISTOR						
	R1726	NRSA63J-472X	MG R	4.7kΩ	1/16W	J
	R1727	NRSA63J-104X	MG R	100kΩ	1/16W	J
	R1728	NRSA63J-103X	MG R	10kΩ	1/16W	J
	R1730	NRSA63J-223X	MG R	22kΩ	1/16W	J
	R1731	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1732	NRSA02F-393X	MG R	39kΩ	1/10W	F
	R1733	NRSA63J-273X	MG R	27kΩ	1/16W	J
	R1734	NRSA63J-391X	MG R	390Ω	1/16W	J
	R1735	NRSA63J-104X	MG R	100kΩ	1/16W	J
	R1736	NRSA63J-333X	MG R	33kΩ	1/16W	J
	R1737	NRSA63J-272X	MG R	2.7kΩ	1/16W	J
	R1738	NRSA63J-103X	MG R	10kΩ	1/16W	J
	R1739	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1740	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1741	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1742	NRSA63J-0R0X	MG R	0.0Ω	1/16W	J
	R1744	NRSA63J-561X	MG R	560Ω	1/16W	J
	R1745	NRSA63J-105X	MG R	1MΩ	1/16W	J
	R1746	NRSA63J-333X	MG R	33kΩ	1/16W	J
	R1747	NRSA63J-103X	MG R	10kΩ	1/16W	J
	R1748	NRSA02J-225X	MG R	2.2MΩ	1/10W	J
	R1749	NRSA02J-185X	MG R	1.8MΩ	1/10W	J
	R1750	NRSA63J-0R0X	MG R	0.0Ω	1/16W	J
	R1755	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1756	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1757	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1758	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1790	NRSA63J-270X	MG R	27Ω	1/16W	J
	R1801	NRSA63J-750X	MG R	75Ω	1/16W	J
	R1802	NRSA63J-750X	MG R	75Ω	1/16W	J
	R1803	NRSA63J-333X	MG R	33kΩ	1/16W	J
	R1804	NRSA63J-750X	MG R	75Ω	1/16W	J
	R1805	NRSA63J-750X	MG R	75Ω	1/16W	J
	R1806	NRSA63J-750X	MG R	75Ω	1/16W	J
	R1807	NRSA63J-750X	MG R	75Ω	1/16W	J
	R1808	NRSA63J-823X	MG R	82kΩ	1/16W	J
	R1809	NRSA63J-391X	MG R	390Ω	1/16W	J
	R1810	NRSA63J-823X	MG R	82kΩ	1/16W	J
	R1811	NRSA63J-391X	MG R	390Ω	1/16W	J
	R1812	NRSA63J-104X	MG R	100kΩ	1/16W	J
	R1813	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1815	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1817	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1818	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1819	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1820	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1821	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1823	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1824	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1826	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1829	NRSA63J-750X	MG R	75Ω	1/16W	J
	R1830	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1831	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1832	NRSA63J-391X	MG R	390Ω	1/16W	J
	R1833	NRSA63J-271X	MG R	270Ω	1/16W	J
	R1834	NRSA63J-562X	MG R	5.6kΩ	1/16W	J
	R1835	NRSA63J-562X	MG R	5.6kΩ	1/16W	J
	R1836	NRSA63J-750X	MG R	75Ω	1/16W	J
	R1837	NRSA63J-101X	MG R	100Ω	1/16W	J
	R1838	QRK126J-121X	UNF R	120Ω	1/2W	J
	R1839	QRE121J-221Y	C R	220Ω	1/2W	J
	R1840	QRE121J-221Y	C R	220Ω	1/2W	J
	R1841	NRSA63J-0R0X	MG R	0.0Ω	1/16W	J
	R1842	NRSA63J-0R0X	MG R	0.0Ω	1/16W	J
	R1843	NRSA63J-821X	MG R	820Ω	1/16W	J
	R1844	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1845	NRSA63J-102X	MG R	1kΩ	1/16W	J
	R1846	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1847	NRSA63J-103X	MG R	10kΩ	1/16W	J
	R1848	NRSA63J-221X	MG R	220Ω	1/16W	J
	R1849	NRSA63J-471X	MG R	470Ω	1/16W	J
	R1850	QRE141J-0R0Y	C R	0.0Ω	1/4W	J

⚠	Symbol No.	Part No.	Part Name	Description		Local
RESISTOR						
	R1880	NRSA63J-202X	MG R	2kΩ	1/16W	J
	R1881	NRSA63J-103X	MG R	10kΩ	1/16W	J
	R1882	NRSA63J-181X	MG R	180Ω	1/16W	J
	R1883	NRSA63J-471X	MG R	470Ω	1/16W	J
	R1902	QRF154K-2R2	UNF R	2.2Ω	15W	K
	R1903	QRL039J-393	OM R	39kΩ	3W	J
	R1904	QRE121J-221Y	C R	220Ω	1/2W	J
	R1905	QRM034J-R10	MP R	0.1Ω	3W	J
	R1906	QRE141J-1R5Y	C R	1.5Ω	1/4W	J
	R1908	NRSA63J-103X	MG R	10kΩ	1/16W	J
	R1911	QRE121J-152Y	C R	1.5kΩ	1/2W	J
	R1912	QRE121J-123Y	C R	12kΩ	1/2W	J
⚠	R1913	QRZ9017-100	F R	10Ω	1/4W	J
	R1914	QRL039J-473	OM R	47kΩ	3W	J
	R1915	NRSA63J-823X	MG R	82kΩ	1/16W	J
	R1916	NRSA63J-154X	MG R	150kΩ	1/16W	J
	R1951	QRE121J-223Y	C R	22kΩ	1/2W	J
	R1952	NRSA63J-222X	MG R	2.2kΩ	1/16W	J
	R1953	QRE121J-152Y	C R	1.5kΩ	1/2W	J
	R1954	QRE121J-150Y	C R	15Ω	1/2W	J
	R1955	QRG01GJ-330	OM R	33Ω	1W	J
	R1956	QRE121J-120Y	C R	12Ω	1/2W	J
	R1957	QRE121J-5R6Y	C R	5.6Ω	1/2W	J
	R1958	QRL039J-820	OM R	82Ω	3W	J
	R1959	QRE121J-820Y	C R	82Ω	1/2W	J
	R1960	NRSA63J-391X	MG R	390Ω	1/16W	J
	R1961	QRL029J-223	OM R	22kΩ	2W	J
	R1962	NRSA63J-681X	MG R	680Ω	1/16W	J
	R1963	QRE121J-332Y	C R	3.3kΩ	1/2W	J
	R1964	NRSA63J-103X	MG R	10kΩ	1/16W	J
	R1965	NRSA63J-0R0X	MG R	0.0Ω	1/16W	J
	R1966	NRSA63J-223X	MG R	22kΩ	1/16W	J
	R1967	NRSA63J-473X	MG R	47kΩ	1/16W	J
	R1968	NRSA63J-331X	MG R	330Ω	1/16W	J
	R1969	QRT029J-1R5	MF R	1.5Ω	2W	J
	R1970	NRSA63J-153X	MG R	15kΩ	1/16W	J
	R1971	NRSA63J-183X	MG R	18kΩ	1/16W	J
	R1972	QRE121J-182Y	C R	1.8kΩ	1/2W	J
	R1973	QRE121J-332Y	C R	3.3kΩ	1/2W	J
	R1974	QRT029J-1R2	MF R	1.2Ω	2W	J
⚠	R1991	QRZ0057-825	C R	8.2MΩ	1W	J
CAPACITOR						
	C1001	NCB31HK-103X	C CAP.	0.01μF	50V	K
	C1002	QETN1HM-106Z	E CAP.	10μF	50V	M
	C1003	QFV71HJ-104Z	MF CAP.	0.1μF	50V	J
	C1004	QETN1CM-477Z	E CAP.	470μF	16V	M
	C1005	NCB31HK-222X	C CAP.	2200pF	50V	K
	C1006	QETN1CM-336Z	E CAP.	33μF	16V	M
	C1007	NCB31HK-103X	C CAP.	0.01μF	50V	K
	C1101	NCB31HK-472X	C CAP.	4700pF	50V	K
	C1102	NCB31HK-472X	C CAP.	4700pF	50V	K
	C1103	NCB31HK-472X	C CAP.	4700pF	50V	K
	C1104	NCB31HK-472X	C CAP.	4700pF	50V	K
	C1105	NCB31HK-472X	C CAP.	4700pF	50V	K
	C1106	NDC31HJ-180X	C CAP.	18pF	50V	J
	C1107	NCB31HK-103X	C CAP.	0.01μF	50V	K
	C1108	NCB31HK-472X	C CAP.	4700pF	50V	K
	C1109	QETN1HM-106Z	E CAP.	10μF	50V	M
	C1150	NCB31HK-472X	C CAP.	4700pF	50V	K
	C1151	NCB31HK-472X	C CAP.	4700pF	50V	K
	C1301	NCB31CK-104X	C CAP.	0.1μF	16V	K
	C1302	NCB31CK-104X	C CAP.	0.1μF	16V	K
	C1304	NCB31HK-103X	C CAP.	0.01μF	50V	K
	C1305	NCB31HK-103X	C CAP.	0.01μF	50V	K
	C1306	NCB31CK-104X	C CAP.	0.1μF	16V	K
	C1307	NDC31HJ-330X	C CAP.	33pF	50V	J

⚠	Symbol No.	Part No.	Part Name	Description		Local
	CAPACITOR					
	C1308	NCB31HK-103X	C CAP.	0.01μF	50V K	
	C1315	QFLC1HJ-473Z	M CAP.	0.047μF	50V J	
	C1401	QETN1HM-336Z	E CAP.	33μF	50V M	
	C1402	QCB31HK-682Z	C CAP.	6800pF	50V K	
	C1403	QEHR1VM-107Z	E CAP.	100μF	35V M	
	C1406	QFLC2AJ-683Z	M CAP.	0.068μF	100V J	
	C1407	QCS32HJ-180Z	C CAP.	18pF	500V J	
	C1411	NCF21HZ-334X	C CAP.	0.33μF	50V Z	
	C1412	NCF21HZ-334X	C CAP.	0.33μF	50V Z	
	C1413	QFLC2AJ-563Z	M CAP.	0.056μF	100V J	
	C1422	QEHQ1VM-108	E CAP.	1000μF	35V M	
	C1471	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1480	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1483	QEZ0195-475Z	BP E CAP.	4.7μF	50V M	
	C1485	QETN1HM-226Z	E CAP.	22μF	50V M	
	C1521	QETN1VM-476Z	E CAP.	47μF	35V M	
	C1522	QFLC1HJ-332Z	M CAP.	3300pF	50V J	
	C1523	QFLC1HJ-223Z	M CAP.	0.022μF	50V J	
	C1524	QFZ0196-382	MPP CAP.	3800pF	1.5kVH±3%	
	C1525	QFZ0200-143	MPP CAP.	0.014μF	1.5kVH±3%	
	C1526	QFP32JJ-223	PP CAP.	0.022μF	630V J	
	C1527	QFZ0199-224	MPP CAP.	0.22μF	AC250V J	
	C1528	QFZ0199-224	MPP CAP.	0.22μF	AC250V J	
	C1529	QENC2AM-225Z	BP E CAP.	2.2μF	100V M	
	C1530	QCB32HK-561Z	C CAP.	560pF	500V K	
	C1531	QEHR1EM-108Z	E CAP.	1000μF	25V M	
	C1532	QCB32HK-561Z	C CAP.	560pF	500V K	
	C1533	QEHR1EM-108Z	E CAP.	1000μF	25V M	
	C1534	QCB32HK-561Z	C CAP.	560pF	500V K	
	C1536	QFLC1HJ-103Z	M CAP.	0.01μF	50V J	
	C1540	QFV71HJ-104Z	MF CAP.	0.1μF	50V J	
	C1541	QETN2EM-106Z	E CAP.	10μF	250V M	
	C1550	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1561	QFV21HJ-154Z	MF CAP.	0.15μF	50V J	
	C1566	QFZ0200-113	MPP CAP.	0.011μF	1.5kVH±3%	
	C1591	QETN1CM-107Z	E CAP.	100μF	16V M	
	C1592	QETM2CM-227	E CAP.	220μF	160V M	
	C1593	QETN1EM-476Z	E CAP.	47μF	25V M	
	C1602	NCB31HK-103X	C CAP.	0.01μF	50V K	
	C1603	QETN1CM-107Z	E CAP.	100μF	16V M	
	C1604	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1606	NDC31HJ-2R0X	C CAP.	2.0pF	50V J	
	C1607	NDC31HJ-2R0X	C CAP.	2.0pF	50V J	
	C1608	NCB31HK-103X	C CAP.	0.01μF	50V K	
	C1609	NCB31HK-103X	C CAP.	0.01μF	50V K	
	C1610	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1611	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1612	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1613	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1615	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1616	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1617	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1618	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1619	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1620	NCB31HK-102X	C CAP.	1000pF	50V K	
	C1621	NCB31HK-102X	C CAP.	1000pF	50V K	
	C1625	NCF21EZ-474X	C CAP.	0.47μF	25V Z	
	C1626	NCB31HK-333X	C CAP.	0.033μF	50V K	
	C1627	NCB31HK-473X	C CAP.	0.047μF	50V K	
	C1628	NCB31HK-223X	C CAP.	0.022μF	50V K	
	C1629	NCB31HK-222X	C CAP.	2200pF	50V K	
	C1630	NCB31HK-104X	C CAP.	0.1μF	50V K	
	C1631	QETN1HM-475Z	E CAP.	4.7μF	50V M	
	C1632	QETN1HM-475Z	E CAP.	4.7μF	50V M	
	C1633	QETN1HM-475Z	E CAP.	4.7μF	50V M	
	C1634	QETN1HM-475Z	E CAP.	4.7μF	50V M	
	C1635	QETN1HM-475Z	E CAP.	4.7μF	50V M	
	C1636	QETN1HM-475Z	E CAP.	4.7μF	50V M	
	C1637	QETN1HM-475Z	E CAP.	4.7μF	50V M	
	C1638	QETN1HM-475Z	E CAP.	4.7μF	50V M	
	C1639	QETN1HM-107Z	E CAP.	100μF	50V M	
	C1640	NCF21HZ-334X	C CAP.	0.33μF	50V Z	

⚠	Symbol No.	Part No.	Part Name	Description		Local
	CAPACITOR					
	C1641	QETN1HM-475Z	E CAP.	4.7μF	50V M	
	C1643	NCB31HK-104X	C CAP.	0.1μF	50V K	
	C1644	NCB31HK-222X	C CAP.	2200pF	50V K	
	C1645	NCB31HK-104X	C CAP.	0.1μF	50V K	
	C1646	NCB31HK-104X	C CAP.	0.1μF	50V K	
	C1647	NCF21EZ-474X	C CAP.	0.47μF	25V Z	
	C1648	NCB31HK-153X	C CAP.	0.015μF	50V K	
	C1649	NCB31HK-153X	C CAP.	0.015μF	50V K	
	C1650	NCF31AZ-105X	C CAP.	1μF	10V Z	
	C1651	QEHR1HM-107Z	E CAP.	100μF	50V M	
	C1652	QETN1HM-105Z	E CAP.	1μF	50V M	
	C1653	NCF21HZ-224X	C CAP.	0.22μF	50V Z	
	C1654	NCF21HZ-224X	C CAP.	0.22μF	50V Z	
	C1655	NCF21HZ-224X	C CAP.	0.22μF	50V Z	
	C1656	NCF21HZ-224X	C CAP.	0.22μF	50V Z	
	C1662	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1681	QETN1CM-227Z	E CAP.	220μF	16V M	
	C1682	QETN1CM-227Z	E CAP.	220μF	16V M	
	C1683	QETN1CM-336Z	E CAP.	33μF	16V M	
	C1684	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1702	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1703	NDC31HJ-330X	C CAP.	33pF	50V J	
	C1704	NDC31HJ-330X	C CAP.	33pF	50V J	
	C1706	NCB21EK-224X	C CAP.	0.22μF	25V K	
	C1707	QETN1CM-107Z	E CAP.	100μF	16V M	
	C1709	QETN1CM-477Z	E CAP.	470μF	16V M	
	C1710	NCB21EK-224X	C CAP.	0.22μF	25V K	
	C1711	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1712	QETN1CM-476Z	E CAP.	47μF	16V M	
	C1713	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1720	QETN1EM-476Z	E CAP.	47μF	25V M	
	C1725	NCB31HK-681X	C CAP.	680pF	50V K	
	C1729	QETN1CM-476Z	E CAP.	47μF	16V M	
	C1730	NCB21EK-224X	C CAP.	0.22μF	25V K	
	C1731	NCB21EK-224X	C CAP.	0.22μF	25V K	
	C1732	QETN1CM-107Z	E CAP.	100μF	16V M	
	C1733	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1734	NCB31HK-222X	C CAP.	2200pF	50V K	
	C1735	NCB31HK-222X	C CAP.	2200pF	50V K	
	C1736	QETN1HM-105Z	E CAP.	1μF	50V M	
	C1737	QETN1HM-105Z	E CAP.	1μF	50V M	
	C1738	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1739	NFV41CJ-104X	MPP CAP.	0.1μF	16V J	
	C1740	QETN1HM-225Z	E CAP.	2.2μF	50V M	
	C1741	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1742	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1743	QETN1CM-107Z	E CAP.	100μF	16V M	
	C1744	NCB31HK-222X	C CAP.	2200pF	50V K	
	C1745	NCB31HK-473X	C CAP.	0.047μF	50V K	
	C1747	NCB31HK-473X	C CAP.	0.047μF	50V K	
	C1749	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1751	NCB21HK-104X	C CAP.	0.1μF	50V K	
	C1752	NCB21HK-104X	C CAP.	0.1μF	50V K	
	C1753	NCB21HK-104X	C CAP.	0.1μF	50V K	
	C1801	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1802	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1803	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1804	QETN1HM-106Z	E CAP.	10μF	50V M	
	C1805	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1806	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1807	NCF31AZ-105X	C CAP.	1μF	10V Z	
	C1808	NCF31AZ-105X	C CAP.	1μF	10V Z	
	C1809	NCB31HK-103X	C CAP.	0.01μF	50V K	
	C1810	NCF31AZ-105X	C CAP.	1μF	10V Z	
	C1811	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1812	NCF31AZ-105X	C CAP.	1μF	10V Z	
	C1813	NCB31HK-103X	C CAP.	0.01μF	50V K	
	C1814	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1815	NCF31AZ-105X	C CAP.	1μF	10V Z	
	C1817	NCF31AZ-105X	C CAP.	1μF	10V Z	
	C1819	NCB31CK-104X	C CAP.	0.1μF	16V K	
	C1820	NCF31AZ-105X	C CAP.	1μF	10V Z	

⚠	Symbol No.	Part No.	Part Name	Description	Local
	CAPACITOR				
	C1821	NCF31AZ-105X	C CAP.	1μF 10V	Z
	C1822	QETN1CM-477Z	E CAP.	470μF 16V	M
	C1823	QETN1CM-107Z	E CAP.	100μF 16V	M
	C1824	QETN1CM-107Z	E CAP.	100μF 16V	M
	C1825	NCB31HK-103X	C CAP.	0.01μF 50V	K
	C1826	NCB31CK-104X	C CAP.	0.1μF 16V	K
	C1827	NCB31HK-103X	C CAP.	0.01μF 50V	K
	C1829	NCB31HK-103X	C CAP.	0.01μF 50V	K
	C1830	NCB31HK-103X	C CAP.	0.01μF 50V	K
	C1831	NCB31HK-103X	C CAP.	0.01μF 50V	K
	C1833	QETN1HM-226Z	E CAP.	22μF 50V	M
	C1834	NDC31HJ-181X	C CAP.	180pF 50V	J
⚠	C1902	QFZ9072-104	MM CAP.	0.1μF	
	C1903	QCZ9015-102Z	C CAP.	1000pF AC250V	Z
	C1904	QCZ9015-102Z	C CAP.	1000pF AC250V	Z
	C1905	QCZ9015-102Z	C CAP.	1000pF AC250V	Z
	C1907	QEZ0371-337	E CAP.	330μF 400V	M
	C1909	QCZ0325-102	C CAP.	1000pF 2000V	K
	C1910	NDC31HJ-102X	C CAP.	1000pF 50V	J
	C1911	QETN1VM-107Z	E CAP.	100μF 35V	M
	C1915	QCB32HK-222Z	C CAP.	2200pF 500V	K
	C1916	QETN1HM-475Z	E CAP.	4.7μF 50V	M
	C1917	QCB32HK-181Z	C CAP.	180pF 500V	K
	C1918	QCB32HK-103	C CAP.	0.01μF 500V	K
	C1919	QCZ0325-391	C CAP.	390pF 2000V	K
	C1920	QCZ0122-471	C CAP.	470pF 2000V	K
	C1921	QFN31HJ-473Z	M CAP.	0.047μF 50V	J
	C1922	QETN2AM-226Z	E CAP.	22μF 100V	M
	C1952	QCB32HK-471Z	C CAP.	470pF 500V	K
	C1953	QEHQ1VM-228	E CAP.	2200μF 35V	M
	C1955	QCB32HK-471Z	C CAP.	470pF 500V	K
	C1956	QETN1VM-107Z	E CAP.	100μF 35V	M
	C1957	QCB31HK-471Z	C CAP.	470pF 50V	K
	C1958	QEHR1CM-108Z	E CAP.	1000μF 16V	M
	C1959	QCZ0364-561	C CAP.	560pF	
	C1960	QEZ0203-227	E CAP.	220μF 160V	M
	C1961	QETN1CM-476Z	E CAP.	47μF 16V	M
	C1962	QETN1HM-106Z	E CAP.	10μF 50V	M
	C1963	QETN1CM-477Z	E CAP.	470μF 16V	M
	C1964	QETN1EM-476Z	E CAP.	47μF 25V	M
	C1965	QETN1VM-476Z	E CAP.	47μF 35V	M
	C1966	QETN1CM-107Z	E CAP.	100μF 16V	M
	C1968	NCB31CK-104X	C CAP.	0.1μF 16V	K
	C1970	QETN1CM-107Z	E CAP.	100μF 16V	M
	C1972	QETN1EM-476Z	E CAP.	47μF 25V	M
	C1974	NCB31CK-104X	C CAP.	0.1μF 16V	K
	C1975	QETN1CM-227Z	E CAP.	220μF 16V	M
	C1977	QETN1EM-476Z	E CAP.	47μF 25V	M
	C1978	NCB21HK-104X	C CAP.	0.1μF 50V	K
	C1980	QETN1CM-107Z	E CAP.	100μF 16V	M
	C1981	NCB31HK-102X	C CAP.	1000pF 50V	K
	C1982	QETN1CM-476Z	E CAP.	47μF 16V	M
	C1983	QETN1CM-227Z	E CAP.	220μF 16V	M
⚠	C1991	QCZ9079-102	C CAP.	1000pF AC250V	M
⚠	C1992	QCZ9079-102	C CAP.	1000pF AC250V	M
⚠	C1993	QCZ9079-102	C CAP.	1000pF AC250V	M
	TRANSFORMER				
	T1521	QQR1229-001	DRIVE TRANSF		
⚠	T1551	QQH0139-001	FBT(HV WIRELESS)		
	T1561	QQR1153-001	DEF TRANSF		
⚠	T1901	QQS0110-001	SW TRANSF		
	COIL				
	L1001	QQL244K-8R2Z	COIL	8.2μH	K
	L1002	QQL244K-8R2Z	COIL	8.2μH	K
	L1101	QQLZ014-R82	COIL	0.82μH	
	L1102	QQL244K-180Z	COIL	18μH	K
	L1301	QQL244K-221Z	PEAKING COIL	220μH	K
	L1401	QQL26AK-220Z	COIL	22μH	K
	L1480	QQR1138-001	CHOKE COIL		
	L1523	QQR1243-001	LINEARITY COIL		

⚠	Symbol No.	Part No.	Part Name	Description	Local
	COIL				
	L1541	QQL244K-220Z	COIL	22μH	K
	L1561	QQLZ028-272	COIL	2700μH	
	L1601	QQL244K-4R7Z	COIL	4.7μH	K
	L1701	QQL244K-100Z	COIL	10μH	K
	L1702	QQL244K-100Z	COIL	10μH	K
	L1731	QQL244J-101Z	COIL	100μH	J
	L1951	QQLZ034-460	COIL	46μH	
	L1953	QQL244J-5R6Z	COIL	5.6μH	J
	L1954	QQL26AK-820Z	COIL	82μH	K
	DIODE				
	D1101	DAN235K-X	SI. DIODE		
	D1301	MTZJ5.1B-T2	ZENER DIODE		
	D1401	RGP10J-5025-T3	SI. DIODE		
	D1402	MTZJ75-T2	ZENER DIODE		
	D1405	1N4003-T2	SI. DIODE		
	D1408	MA111-X	SI. DIODE		
	D1480	MTZJ4.3A-T2	ZENER DIODE		
	D1521	RH3G-F1	SI. DIODE		
	D1522	31DF6N-FC5	SI. DIODE		
	D1523	RGP10J-5025-T3	SI. DIODE		
	D1541	RGP10J-5025-T3	SI. DIODE		
	D1550	MA111-X	SI. DIODE		
	D1551	EU2-T3	SI. DIODE		
	D1553	RGP10J-5025-T3	SI. DIODE		
	D1554	RGP10J-5025-T3	SI. DIODE		
	D1592	MA3075/H/-X	ZENER DIODE		
	D1652	MA3330/L/-X	ZENER DIODE		
	D1653	MA3330/L/-X	ZENER DIODE		
	D1655	MA111-X	SI. DIODE		
	D1657	MA111-X	SI. DIODE		
	D1701	MA111-X	SI. DIODE		
	D1702	MA3020-X	ZENER DIODE		
	D1703	MA3036-X	ZENER DIODE		
	D1730	MA111-X	SI. DIODE		
	D1731	MA111-X	SI. DIODE		
	D1732	MA111-X	SI. DIODE		
	D1733	MA111-X	SI. DIODE		
	D1801	MA3120/M/-X	ZENER DIODE		
	D1802	MA3120/M/-X	ZENER DIODE		
	D1901	GSIB460	BRIDGE DIODE		
	D1902	MTZJ33B-T2	ZENER DIODE		
	D1906	MTZJ27B-T2	ZENER DIODE		
	D1907	MTZJ33B-T2	ZENER DIODE		
	D1908	MA3200/M/-X	ZENER DIODE		
	D1909	1SS133-T2	SI. DIODE		
	D1911	RGP10J-5025-T3	SI. DIODE		
	D1912	RGP10J-5025-T3	SI. DIODE		
	D1913	RGP10M-5010-T3	SI. DIODE		
	D1914	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J
	D1915	MTZJ39B-T2	ZENER DIODE		
	D1916	MTZJ15B-T2	ZENER DIODE		
	D1917	1SS133-T2	SI. DIODE		
	D1920	MTZJ15B-T2	ZENER DIODE		
	D1950	RGP10J-5025-T3	SI. DIODE		
	D1952	ERC30-02L38	SI. DIODE		
	D1953	RGP10J-5025-T3	SI. DIODE		
	D1954	RU30A-F1	SI. DIODE		
	D1955	1SR35-400A-T2	SI. DIODE		
	D1956	31DF6N-FC5	SI. DIODE		
	D1958	MTZJ5.1A-T2	ZENER DIODE		
	D1960	MA111-X	SI. DIODE		
	D1964	MA3330/L/-X	ZENER DIODE		
	D1966	MA3047/L/-X	ZENER DIODE		
	D1968	MA111-X	SI. DIODE		
	D1969	MA111-X	SI. DIODE		
	D1970	MTZJ9.1B-T2	ZENER DIODE		
	D1971	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J

⚠	Symbol No.	Part No.	Part Name	Description	Local
	TRANSISTOR				
	Q1101	2SC5083/L-P/-T	TRANSISTOR		
	Q1102	UN2212-X	DIGI. TRANSISTOR		
	Q1103	UN2212-X	DIGI. TRANSISTOR		
	Q1104	2SB709A/QR/-X	TRANSISTOR		
	Q1105	2SD601A/QR/-X	TRANSISTOR		
	Q1106	2SB709A/QR/-X	TRANSISTOR		
	Q1107	UN2212-X	DIGI. TRANSISTOR		
	Q1108	2SD601A/QR/-X	TRANSISTOR		
	Q1109	UN2212-X	DIGI. TRANSISTOR		
	Q1110	UN2212-X	DIGI. TRANSISTOR		
	Q1150	2SD601A/QR/-X	TRANSISTOR		
	Q1301	2SB709A/QR/-X	TRANSISTOR		
	Q1302	2SB709A/QR/-X	TRANSISTOR		
	Q1303	UN2212-X	DIGI. TRANSISTOR		
	Q1304	2SD601A/QR/-X	TRANSISTOR		
	Q1480	2SD1408/OY/-LB	POWER TRANSISTOR		
	Q1521	2SC2655/Y/-T	TRANSISTOR		
	Q1522	2SD2634-YD	POWER TRANSISTOR		
	Q1591	2SA1208/ST/Z1-T	TRANSISTOR		
	Q1592	UN2212-X	DIGI. TRANSISTOR		
	Q1660	2SD601A/QR/-X	TRANSISTOR		
	Q1661	2SD601A/QR/-X	TRANSISTOR		
	Q1683	2SB709A/QR/-X	TRANSISTOR		
	Q1684	2SB709A/QR/-X	TRANSISTOR		
	Q1685	DTC323TK-X	DIGI. TRANSISTOR		
	Q1686	DTC323TK-X	DIGI. TRANSISTOR		
	Q1701	2SB709A/QR/-X	TRANSISTOR		
	Q1702	2SB709A/QR/-X	TRANSISTOR		
	Q1720	2SB709A/QR/-X	TRANSISTOR		
	Q1801	DTC323TK-X	DIGI. TRANSISTOR		
	Q1802	DTC323TK-X	DIGI. TRANSISTOR		
	Q1803	2SB709A/QR/-X	TRANSISTOR		
	Q1804	2SC1740S/QR/-T	TRANSISTOR		
	Q1860	2SD601A/QR/-X	TRANSISTOR		
	Q1861	2SB709A/QR/-X	TRANSISTOR		
	Q1862	2SB709A/QR/-X	TRANSISTOR		
	Q1901	2SC3852A	POWER TRANSISTOR		
	Q1951	2SA1013/RO/-T	TRANSISTOR		
	Q1952	2SD601A/QR/-X	TRANSISTOR		
	Q1953	2SD601A/QR/-X	TRANSISTOR		
	Q1954	2SD601A/QR/-X	TRANSISTOR		
	Q1955	2SD601A/QR/-X	TRANSISTOR		
	IC				
	IC1301	TDA9181T/N1-X	I.C(MONO-ANA)		
	IC1401	LA78041	I.C(MONO-ANA)		
	IC1461	JLC1562BF-X	I.C(MONO-ANA)		
	IC1480	UPC358G2-XE	I.C(MONOLITHIC)		
	IC1601	MSP3417G-X	I.C(MONO-ANA)		
	IC1602	NJW1136G-X	I.C(MONO-ANA)		
	IC1650	AN5277	I.C(MONO-ANA)		
	IC1701	TDA9365N23S0873	I.C(MCU)		
	IC1702	AT24C08-21WS3	I.C(MEMORY-OTH)	(SERVICE)	
	IC1801	MM1492AF	I.C(MONO-ANA)		
	IC1901	STR-F6256S-F7	I C(HYBRID)		
	IC1951	SE135N	I C(HYBRID)		
	IC1972	L88M33T-X	I.C(MONO-ANA)		
	IC1973	BA17812T	I.C(MONO-ANA)		
	IC1974	BA51W12ST-V5	I.C(MONO-ANA)		
	OTHERS				
	CF1103	QAX0639-001Z	C TRAP		
⚠	CP1951	ICP-N75-Y	IC PROTECTOR		
⚠	CP1952	ICP-N38-Y	IC PROTECTOR		
⚠	CP1953	ICP-N38-Y	IC PROTECTOR		
	J1801	QNZ0454-001	AV JACK		
	J1802	QNN0349-002	PIN JACK		
	J1803	QNN0348-001	PIN JACK		
	J1804	QNN0349-001	PIN JACK		

⚠	Symbol No.	Part No.	Part Name	Description	Local
	OTHERS				
	K1705	QQR1214-001Y	FERRITE BEADS		
	K1901	QQR1214-001Y	FERRITE BEADS		
	K1902	QQR1214-001Y	FERRITE BEADS		
	K1903	QQR1214-001Y	FERRITE BEADS		
	K1951	QQR1214-001Y	FERRITE BEADS		
	K1953	QQR1214-001Y	FERRITE BEADS		
	K1954	QQR1214-001Y	FERRITE BEADS		
	K1955	QQR1214-001Y	FERRITE BEADS		
⚠	LF1901	QQR1356-001	LINE FILTER		
⚠	PC1901	PC123F2	IC(PHOTO COUPLE)		
⚠	RY1901	QSK0061-001	RELAY		
	SF1101	QAX0663-001	SAW FILTER		
	SF1102	QAX0731-001	SAW FILTER		
	TH1901	QAD0145-2R3	P THERMISTOR		
	TU1001	QAU0185-005	TUNER		
	W1010	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1031	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1239	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1256	QQR1113-001Z	FERRITE BEADS		
	W1257	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1306	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1307	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1309	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1321	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1325	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1326	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1333	QQR1113-001Z	FERRITE BEADS		
	W1334	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1379	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1386	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1395	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1397	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1402	QQR1113-001Z	FERRITE BEADS		
	W1405	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1418	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1423	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1428	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1430	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	W1431	QQR1113-001Z	FERRITE BEADS		
	X1601	CE42546-001Z	X TAL		
	X1701	QAX0737-001	CRYSTAL		
	Y1004	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	Y1602	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	Y1603	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	

CRT SOCKET PW BOARD ASS'Y (SCH-3005A-H2)

⚠	Symbol No.	Part No.	Part Name	Description	Local
	RESISTOR				
	R3101	NRSA63J-682X	MG R	6.8kΩ 1/16W J	
	R3102	NRSA63J-102X	MG R	1kΩ 1/16W J	
	R3103	NRSA63J-153X	MG R	15kΩ 1/16W J	
	R3104	NRSA63J-682X	MG R	6.8kΩ 1/16W J	
	R3105	NRSA63J-102X	MG R	1kΩ 1/16W J	
	R3106	NRSA63J-272X	MG R	2.7kΩ 1/16W J	
	R3107	NRSA63J-682X	MG R	6.8kΩ 1/16W J	
	R3108	NRSA63J-102X	MG R	1kΩ 1/16W J	
	R3109	NRSA63J-562X	MG R	5.6kΩ 1/16W J	
	R3110	NRSA63J-101X	MG R	100Ω 1/16W J	
	R3111	NRSA63J-101X	MG R	100Ω 1/16W J	
	R3112	NRSA63J-101X	MG R	100Ω 1/16W J	
	R3113	NRSA63J-563X	MG R	56kΩ 1/16W J	
	R3120	QRE121J-101Y	C R	100Ω 1/2W J	
	R3121	NRSA63J-101X	MG R	100Ω 1/16W J	
	R3122	NRSA63J-101X	MG R	100Ω 1/16W J	

⚠	Symbol No.	Part No.	Part Name	Description	Local
RESISTOR					
	R3123	QRE121J-152Y	C R	1.5kΩ 1/2W	J
	R3124	NRSA63J-221X	MG R	220Ω 1/16W	J
	R3125	NRSA63J-101X	MG R	100Ω 1/16W	J
	R3126	NRSA63J-101X	MG R	100Ω 1/16W	J
	R3127	QRE121J-152Y	C R	1.5kΩ 1/2W	J
	R3128	NRSA63J-221X	MG R	220Ω 1/16W	J
	R3129	NRSA63J-101X	MG R	100Ω 1/16W	J
	R3130	NRSA63J-101X	MG R	100Ω 1/16W	J
	R3131	QRE121J-152Y	C R	1.5kΩ 1/2W	J
	R3132	NRSA63J-221X	MG R	220Ω 1/16W	J
	R3133	NRSA63J-470X	MG R	47Ω 1/16W	J
	R3136	NRSA63J-470X	MG R	47Ω 1/16W	J
	R3137	NRSA63J-470X	MG R	47Ω 1/16W	J
	R3138	QRL029J-223	OM R	22kΩ 2W	J
	R3139	QRL029J-223	OM R	22kΩ 2W	J
	R3140	QRZ0107-102Z	C R	1kΩ 1W	K
	R3141	QRL029J-223	OM R	22kΩ 2W	J
	R3143	QRL029J-223	OM R	22kΩ 2W	J
	R3144	QRZ0107-102Z	C R	1kΩ 1W	K
	R3145	QRL029J-223	OM R	22kΩ 2W	J
	R3146	QRL029J-223	OM R	22kΩ 2W	J
	R3147	QRZ0107-102Z	C R	1kΩ 1W	K
	R3148	QRE121J-124Y	C R	120kΩ 1/2W	J
	R3149	QRE121J-102Y	C R	1kΩ 1/2W	J
	R3151	QRE121J-124Y	C R	120kΩ 1/2W	J
	R3152	QRE121J-102Y	C R	1kΩ 1/2W	J
	R3153	QRE121J-124Y	C R	120kΩ 1/2W	J
	R3154	QRE121J-102Y	C R	1kΩ 1/2W	J
	R3155	QRE121J-474Y	C R	470kΩ 1/2W	J
	R3157	QRZ0107-474Z	C R	470kΩ 1W	K
	R3159	NRSA63J-184X	MG R	180kΩ 1/16W	J
	R3161	QRE121J-333Y	C R	33kΩ 1/2W	J
	R3164	QRE121J-560Y	C R	56Ω 1/2W	J
	R3166	QRE121J-333Y	C R	33kΩ 1/2W	J
	R3167	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R3168	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R3170	NRSA63J-332X	MG R	3.3kΩ 1/16W	J
	R3171	NRSA63J-681X	MG R	680Ω 1/16W	J
	R3172	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J
	R3173	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J
	R3174	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J
	R3211	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J
	R3212	NRSA63J-153X	MG R	15kΩ 1/16W	J
	R3213	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R3214	NRSA63J-152X	MG R	1.5kΩ 1/16W	J
	R3215	NRSA63J-680X	MG R	68Ω 1/16W	J
	R3216	NRSA63J-221X	MG R	220Ω 1/16W	J
⚠	R3217	QRJ146J-100X	UNF R	10Ω 1/4W	J
	R3221	NRSA63J-470X	MG R	47Ω 1/16W	J
	R3222	NRSA63J-470X	MG R	47Ω 1/16W	J
	R3224	NRSA63J-122X	MG R	1.2kΩ 1/16W	J
	R3225	QRE121J-563Y	C R	56kΩ 1/2W	J
	R3226	QRE121J-563Y	C R	56kΩ 1/2W	J
	R3227	NRSA63J-122X	MG R	1.2kΩ 1/16W	J
	R3228	NRSA63J-390X	MG R	39Ω 1/16W	J
	R3229	QRE121J-2R7Y	C R	2.7Ω 1/2W	J
	R3230	QRE121J-2R7Y	C R	2.7Ω 1/2W	J
	R3231	NRSA63J-390X	MG R	39Ω 1/16W	J
	R3232	QRE121J-121Y	C R	120Ω 1/2W	J
	R3233	QRL029J-391	OM R	390Ω 2W	J
	R3251	NDC31HJ-331X	C CAP.	330pF 50V	J
	R3252	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R3253	NRSA63J-101X	MG R	100Ω 1/16W	J
	R3254	NRSA63J-563X	MG R	56kΩ 1/16W	J
	R3255	NRSA63J-223X	MG R	22kΩ 1/16W	J
	R3256	NRSA63J-681X	MG R	680Ω 1/16W	J
	R3257	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R3258	NRSA63J-182X	MG R	1.8kΩ 1/16W	J
	R3259	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R3260	NRSA63J-271X	MG R	270Ω 1/16W	J
	R3261	NRSA63J-101X	MG R	100Ω 1/16W	J
	R3262	NRSA63J-101X	MG R	100Ω 1/16W	J

⚠	Symbol No.	Part No.	Part Name	Description	Local
RESISTOR					
	R3263	NRSA63J-101X	MG R	100Ω 1/16W	J
	R3264	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R3265	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R3266	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R3267	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R3268	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R3269	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R3270	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R3271	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R3272	NRSA63J-222X	MG R	2.2kΩ 1/16W	J
	R3273	NRSA63J-102X	MG R	1kΩ 1/16W	J
	R3274	NRSA63J-103X	MG R	10kΩ 1/16W	J
	R3275	NRSA63J-102X	MG R	1kΩ 1/16W	J
CAPACITOR					
	C3101	QETN1CM-477Z	E CAP.	470μF 16V	M
	C3107	QETM2EM-106	E CAP.	10μF 250V	M
	C3108	QETM2EM-476	E CAP.	47μF 250V	M
	C3110	QCZ0131-222	C CAP.	2200pF 2000V	K
	C3114	QCS31HJ-151Z	C CAP.	150pF 50V	J
	C3115	QETN1CM-476Z	E CAP.	47μF 16V	M
	C3116	NDC31HJ-561X	C CAP.	560pF 50V	J
	C3117	NCB31HK-471X	C CAP.	470pF 50V	K
	C3118	NCB31HK-471X	C CAP.	470pF 50V	K
	C3119	QFLC1HJ-104Z	M CAP.	0.1μF 50V	J
	C3120	QETN1HM-105Z	E CAP.	1μF 50V	M
	C3121	NCB31HK-102X	C CAP.	1000pF 50V	K
	C3204	NDC31HJ-561X	C CAP.	560pF 50V	J
	C3205	QETN1HM-335Z	E CAP.	3.3μF 50V	M
	C3206	QETN1HM-106Z	E CAP.	10μF 50V	M
	C3207	QCS31HJ-5R0Z	C CAP.	5.0pF 50V	J
	C3209	QETN1CM-107Z	E CAP.	100μF 16V	M
	C3211	NDC31HJ-391X	C CAP.	390pF 50V	J
	C3212	QCB32HK-472Z	C CAP.	4700pF 500V	K
	C3213	NDC31HJ-561X	C CAP.	560pF 50V	J
	C3214	QETN2CM-106Z	E CAP.	10μF 160V	M
	C3215	QCB32HK-472Z	C CAP.	4700pF 500V	K
	C3216	QETN2CM-106Z	E CAP.	10μF 160V	M
	C3217	QETN1AM-107Z	E CAP.	100μF 10V	M
	C3218	QETN1AM-107Z	E CAP.	100μF 10V	M
	C3219	QETN1AM-337Z	E CAP.	330μF 10V	M
	C3220	QCS32HJ-680Z	C CAP.	68pF 500V	J
	C3251	QENC1HM-105Z	BP E CAP.	1μF 50V	M
	C3252	NDC31HJ-151X	C CAP.	150pF 50V	J
	C3253	NDC31HJ-560X	C CAP.	56pF 50V	J
	C3255	NCB31HK-104X	C CAP.	0.1μF 50V	K
	C3261	NDC31HJ-820X	C CAP.	82pF 50V	J
	C3262	NDC31HJ-820X	C CAP.	82pF 50V	J
	C3263	NDC31HJ-820X	C CAP.	82pF 50V	J
	C3264	QETN1AM-107Z	E CAP.	100μF 10V	M
	C3265	QETN1AM-107Z	E CAP.	100μF 10V	M
	C3266	QETN1AM-107Z	E CAP.	100μF 10V	M
	C3267	QETN1CM-227Z	E CAP.	220μF 16V	M
COIL					
	L3121	QQL244J-5R6Z	COIL	5.6μH	J
	L3122	QQLZ034-220	COIL	22μH	
	L3251	QQL244K-150Z	COIL	15μH	K
DIODE					
	D3107	MA111-X	SI. DIODE		
	D3108	MA3075/H/-X	ZENER DIODE		
	D3109	MA3051/H/-X	ZENER DIODE		
	D3110	MA111-X	SI. DIODE		
	D3111	MA3051/H/-X	ZENER DIODE		
	D3112	MA111-X	SI. DIODE		
	D3113	MA3051/H/-X	ZENER DIODE		
	D3114	MA111-X	SI. DIODE		

⚠	Symbol No.	Part No.	Part Name	Description	Local
	DIODE				
	D3118	1SS244-T2	SI. DIODE		
	D3119	1SS244-T2	SI. DIODE		
	D3120	1SS244-T2	SI. DIODE		
	D3121	1SS244-T2	SI. DIODE		
	D3122	1SS244-T2	SI. DIODE		
	D3123	1SS244-T2	SI. DIODE		
	D3124	1N4003-T2	SI. DIODE		
	D3125	1N4003-T2	SI. DIODE		
	D3126	1N4003-T2	SI. DIODE		
	D3127	MA111-X	SI. DIODE		
	D3130	MA3150/M/-X	ZENER DIODE		
	D3132	MA3043-X	ZENER DIODE		
	D3134	1SS244-T2	SI. DIODE		
	D3136	MA111-X	SI. DIODE		
	D3138	MA111-X	SI. DIODE		
	D3141	MTZJ30A-T2	ZENER DIODE		
	D3142	MTZJ30A-T2	ZENER DIODE		
	D3143	MTZJ30A-T2	ZENER DIODE		
	D3201	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	D3202	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	D3203	RGP10J-5025-T3	SI. DIODE		
	D3204	RGP10J-5025-T3	SI. DIODE		
	TRANSISTOR				
	Q3101	2SD601A/QR/-X	TRANSISTOR		
	Q3102	2SD601A/QR/-X	TRANSISTOR		
	Q3103	2SD601A/QR/-X	TRANSISTOR		
	Q3104	2SD601A/QR/-X	TRANSISTOR		
	Q3105	2SD601A/QR/-X	TRANSISTOR		
	Q3106	2SD601A/QR/-X	TRANSISTOR		
	Q3121	2SC1740S/QR/-T	TRANSISTOR		
	Q3122	2SA933AS/QR/-T	TRANSISTOR		
	Q3123	2SC4075/DE/YA11	POWER TRANSISTOR		
	Q3124	2SC1740S/QR/-T	TRANSISTOR		
	Q3125	2SC4075/DE/YA11	POWER TRANSISTOR		
	Q3126	2SC1740S/QR/-T	TRANSISTOR		
	Q3127	2SC4075/DE/YA11	POWER TRANSISTOR		
	Q3128	2SC1740S/QR/-T	TRANSISTOR		
	Q3129	2SC3334-T	TRANSISTOR		
	Q3130	2SA1321-T	TRANSISTOR		
	Q3131	2SC3334-T	TRANSISTOR		
	Q3132	2SA1321-T	TRANSISTOR		
	Q3133	2SC3334-T	TRANSISTOR		
	Q3134	2SA1321-T	TRANSISTOR		
	Q3135	2SB709A/QR/-X	TRANSISTOR		
	Q3204	2SC1740S/QR/-T	TRANSISTOR		
	Q3205	2SC1740S/QR/-T	TRANSISTOR		
	Q3206	2SA933AS/QR/-T	TRANSISTOR		
	Q3209	2SA1837	POWER TRANSISTOR		
	Q3210	2SC4793	POWER TRANSISTOR		
	Q3251	2SB709A/QR/-X	TRANSISTOR		
	Q3252	2SD601A/QR/-X	TRANSISTOR		
	Q3253	2SB709A/QR/-X	TRANSISTOR		
	Q3261	2SB709A/QR/-X	TRANSISTOR		
	Q3262	2SB709A/QR/-X	TRANSISTOR		
	Q3263	2SB709A/QR/-X	TRANSISTOR		
	Q3264	2SD601A/QR/-X	TRANSISTOR		
	Q3265	2SD601A/QR/-X	TRANSISTOR		
	Q3266	2SD601A/QR/-X	TRANSISTOR		
	OTHERS				
	CL3001	QZW0027-004	WIRE CLAMP		
	DL3261	CE41925-001	DELAY LINE		
	DL3262	CE41925-001	DELAY LINE		
	DL3263	CE41925-001	DELAY LINE		
⚠	FR3201	QRZ9021-561	F R	560Ω 1W J	
	K3201	CE41492-001Z	CHOKE COIL		
	K3202	CE41492-001Z	CHOKE COIL		
	K3203	CE41492-001Z	CHOKE COIL		

⚠	Symbol No.	Part No.	Part Name	Description	Local
	OTHERS				
	K3204	CE41492-001Z	CHOKE COIL		
	K3205	QQR1113-001Z	FERRITE BEADS		
	K3206	QQR1113-001Z	FERRITE BEADS		
	K3207	QQR1113-001Z	FERRITE BEADS		
	K3208	QQR1113-001Z	FERRITE BEADS		
	SG3101	QAF0056-501Z	SURGE ABSORBER		
	SG3102	QAF0056-501Z	SURGE ABSORBER		
⚠	SK3001	CE42670-001	CRT SOCKET		
	W3034	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	

FRONT CONTROL PW BOARD ASS'Y (SCH-8004A-H2)

⚠	Symbol No.	Part No.	Part Name	Description	Local
	RESISTOR				
	R8482	NRSA63J-124X	MG R	120kΩ 1/16W J	
	R8483	NRSA63J-683X	MG R	68kΩ 1/16W J	
	R8484	NRSA63J-562X	MG R	5.6kΩ 1/16W J	
	R8485	NRSA63J-562X	MG R	5.6kΩ 1/16W J	
	R8486	NRSA63J-333X	MG R	33kΩ 1/16W J	
	R8487	NRSA63J-332X	MG R	3.3kΩ 1/16W J	
	R8488	NRSA63J-154X	MG R	150kΩ 1/16W J	
	R8489	NRSA63J-104X	MG R	100kΩ 1/16W J	
	R8491	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	R8492	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	R8495	NRSA63J-152X	MG R	1.5kΩ 1/16W J	
	R8497	NRSA63J-562X	MG R	5.6kΩ 1/16W J	
	R8499	QRE121J-561Y	C R	560Ω 1/2W J	
	R8801	NRSA63J-332X	MG R	3.3kΩ 1/16W J	
	R8802	NRSA63J-392X	MG R	3.9kΩ 1/16W J	
	R8803	NRSA63J-682X	MG R	6.8kΩ 1/16W J	
	R8805	NRSA63J-682X	MG R	6.8kΩ 1/16W J	
	R8807	NRSA63J-181X	MG R	180Ω 1/16W J	
	R8808	NRSA63J-221X	MG R	220Ω 1/16W J	
	R8809	NRSA63J-331X	MG R	330Ω 1/16W J	
	R8810	NRSA63J-471X	MG R	470Ω 1/16W J	
	R8811	NRSA63J-821X	MG R	820Ω 1/16W J	
	R8812	NRSA63J-122X	MG R	1.2kΩ 1/16W J	
	R8813	NRSA63J-471X	MG R	470Ω 1/16W J	
	R8815	QRE121J-271Y	C R	270Ω 1/2W J	
	R8816	QRE121J-271Y	C R	270Ω 1/2W J	
	R8817	NRSA63J-102X	MG R	1kΩ 1/16W J	
	R8818	NRSA63J-102X	MG R	1kΩ 1/16W J	
	R8819	NRSA63J-272X	MG R	2.7kΩ 1/16W J	
	R8826	NRSA63J-0R0X	MG R	0.0Ω 1/16W J	
	R8830	NRSA63J-222X	MG R	2.2kΩ 1/16W J	
	R8831	NRSA63J-222X	MG R	2.2kΩ 1/16W J	
⚠	R8901	QRZ0111-474	C R	470kΩ 1W K	
	CAPACITOR				
	C8481	NCB21EK-224X	C CAP.	0.22μF 25V K	
	C8482	NCB21EK-224X	C CAP.	0.22μF 25V K	
	C8483	NCB21EK-224X	C CAP.	0.22μF 25V K	
	C8484	NCB21EK-224X	C CAP.	0.22μF 25V K	
	C8485	QETN1EM-476Z	E CAP.	47μF 25V M	
	C8487	QFLC1HJ-103Z	M CAP.	0.01μF 50V J	
	C8660	QETM1VM-108	E CAP.	1000μF 35V M	
	C8661	QETM1VM-108	E CAP.	1000μF 35V M	
	C8801	QETN1HM-106Z	E CAP.	10μF 50V M	
	C8802	QETN1CM-107Z	E CAP.	100μF 16V M	
	C8803	NCB31CK-104X	C CAP.	0.1μF 16V K	
	C8815	QETN1CM-107Z	E CAP.	100μF 16V M	
⚠	C8901	QFZ9072-224	MM CAP.	0.22μF	

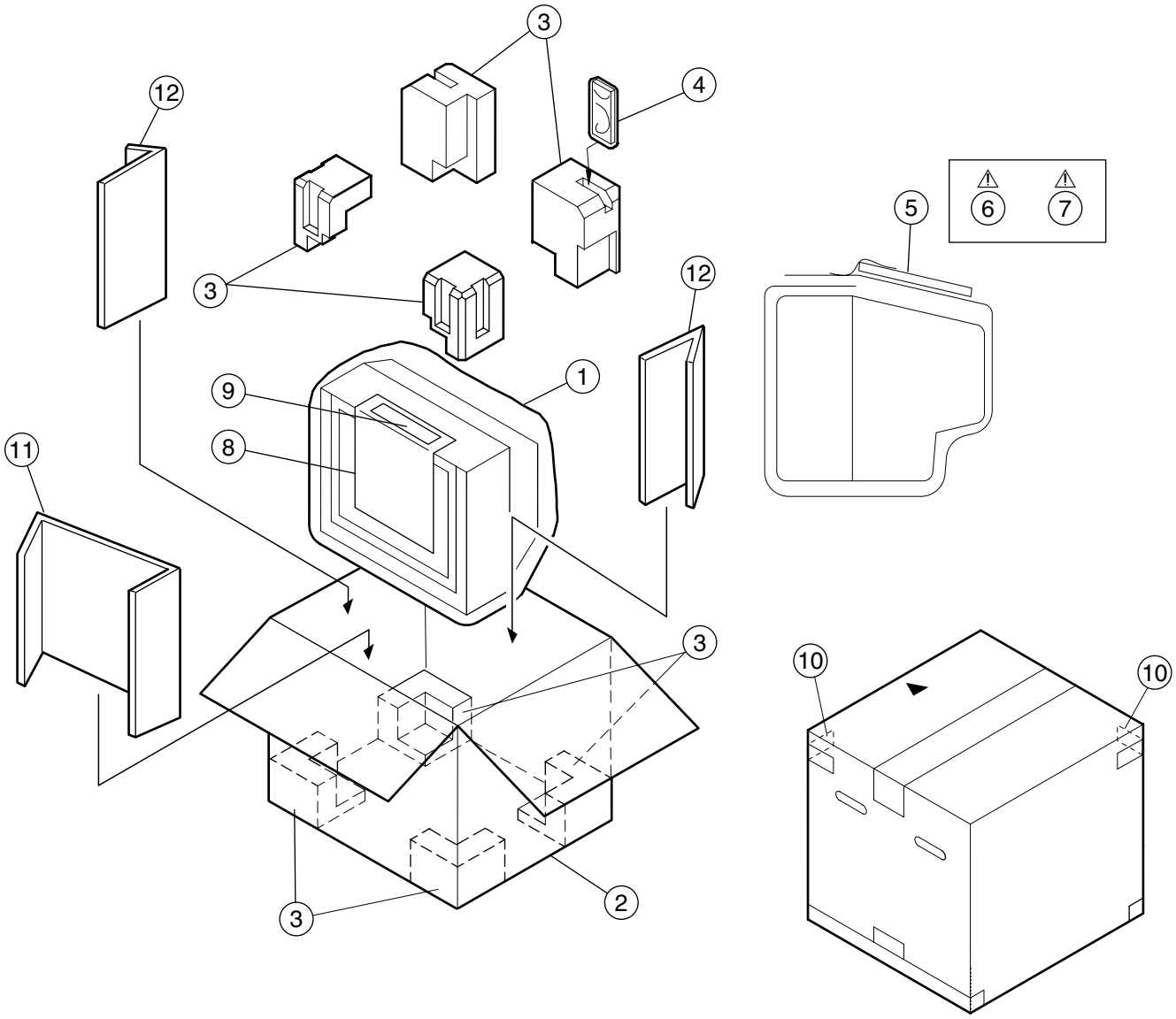
⚠	Symbol No.	Part No.	Part Name	Description	Local
	COIL				
	L8401	QQL244K-820Z	COIL	82μH	K
	DIODE				
	D8801	MA111-X	SI. DIODE		
	D8802	P1241-04	PHOTO CONDUCTOR		
	D8803	SLR-342VR-T16	LED		
	TRANSISTOR				
	Q8481	2SC2412K/QR/-X	TRANSISTOR		
	Q8801	2SA1037AK/QR/-X	TRANSISTOR		
	IC				
	IC8481	LA6515	I.C(MONO-ANA)		
	IC8801	GP1UM281QK	IR DETECT UNIT		
	OTHERS				
		CM35921-005-H	CDS HOLDER		
		CM36626-B01-H	LED HOLDER		
⚠	F8901	QMF51E2-4R0J4	FUSE		
	FC8901	CEMG002-001Z	FUSE CLIP		
	J8302	QNN0279-003	PIN JACK		
	J8303	QNN0279-002	PIN JACK		
	J8304	QNN0279-001	PIN JACK		
	J8801	QNS0155-001	3.5 JACK		
⚠	LF8901	QQR1356-001	LINE FILTER		
	S8801	QSW0619-003Z	TACT SWITCH	CH+	
	S8802	QSW0619-003Z	TACT SWITCH	CH-	
	S8803	QSW0619-003Z	TACT SWITCH	MENU	
	S8804	QSW0619-003Z	TACT SWITCH	TV/VIDEO	
	S8805	QSW0619-003Z	TACT SWITCH	VOL+	
	S8806	QSW0619-003Z	TACT SWITCH	VOL-	
⚠	S8901	QSW0750-001	PUSH SWITCH	POWER	
⚠	VA8901	QAF0052-621	VARISTOR		
	Y8401	NRSA63J-0R0X	MG R	0.0Ω 1/16W	J

REMOTE CONTROL UNIT PARTS LIST (RM-C1010-1H)

⚠	Ref. No.	Part No.	Part Name	Description	Local
		25-1168F	BATTERY COVER		

⚠	Symbol No.	Part No.	Part Name	Description	Local

PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	CP30967-004-H	POLY BAG		
	2	GG10044-043A-H	P CASE		
	3	GG10193-001C-H	CUSHION ASSY		
	4	RM-C1010-1H	RC HAND UNIT		
	5	CP30966-001-H	POLY BAG		
⚠	6	LCT1170-001B-H	INST BOOK		
⚠	7	QAM0054-001	CONVERSION PLUG		
	8	LC30946-001A-H	CRT PROTECTOR		
	9	LC30947-002A-H	CAUTION SHEET		
	10	GG20025-003A-H	CORNER LABEL	(x2)	
	11	GG20011-008A-H	SUPPORT PAD(FRONT)		
	12	GG20011-009A-H	SUPPORT PAD(SIDE)	(x2)	

SERVICE NOTE :

JVC

SCHEMATIC DIAGRAMS

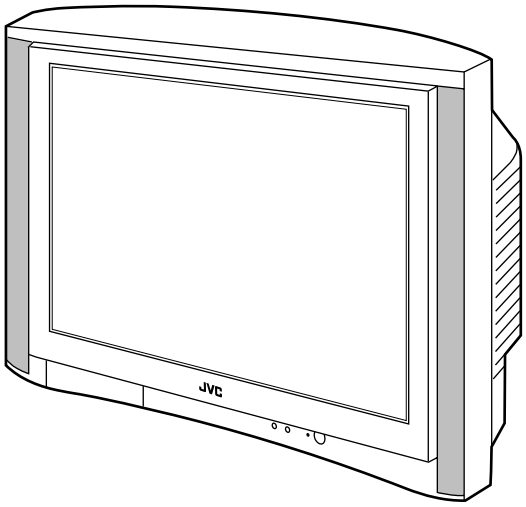
COLOR TELEVISION

BASIC CHASSIS
CH

AV-29WS3 /M

CD-ROM No. SML200301

RM-C1010-1H



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No. 52081
Dec. 2002

AV-29WS3 /M STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1. SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2. SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1) Input signal : Color bar signal
(2) Setting positions of each knob/button and variable resistor : Original setting position when shipped
(3) Internal resistance of tester : DC 20kΩ/V
(4) Oscilloscope sweeping time : H ⇒ 20μS/div
: V ⇒ 5mS/div
: Others ⇒ Sweeping time is specified
(5) Voltage values : All DC voltage values

∗Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3. INDICATION OF PARTS SYMBOL [EXAMPLE]

• In the PW board : R1209 → R209

4. INDICATIONS ON THE CIRCUIT DIAGRAM

(1) Resistors

• Resistance value
No unit : [Ω]
k : [kΩ]
M : [MΩ]
• Rated allowable power
No indication : 1/16 [W]
Others : As specified
• Type
No indication : Carbon resistor
OMR : Oxide metal film resistor
MFR : Metal film resistor
MPR : Metal plate resistor
UNFR : Uninflammable resistor
FR : Fusible resistor

∗Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2) Capacitors

• Capacitance value
1 or higher : [pF]
less than 1 : [μF]
• Withstand voltage
No indication : DC50[V]
AC indicated : AC withstand voltage [V]
Others : DC withstand voltage [V]

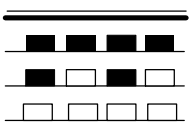
∗ Electrolytic Capacitors
47/50[Example] : Capacitance value [μF]/withstand voltage[V]

• Type
No indication : Ceramic capacitor
MY : Mylar capacitor
MM : Metalized mylar capacitor
PP : Polypropylene capacitor
MPP : Metalized polypropylene capacitor
MF : Metalized film capacitor
TF : Thin film capacitor
BP : Bipolar electrolytic capacitor
TAN : Tantalum capacitor

(3) Coils

No unit : [μH]
Others : As specified

(4) Power Supply

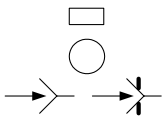

: B1
: B2(12V)
: 9V
: 5V

∗Respective voltage values are indicated

(5) Test point

: Test point
: Only test point display

(6) Connecting method


: Connector
: Wrapping or soldering
: Receptacle

(7) Ground symbol

⊥ : LIVE side ground
⏚ : ISOLATED(NEUTRAL) side ground
⏚ : EARTH ground
▽ : DIGITAL ground

5. NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
(2) Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time with a measuring apparatus (oscilloscope, etc.). If the above precaution is not respected , a fuse or any parts will be broken.

• Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

Dec. 2002 No. 52081

CONTENTS

SEMICONDUCTOR SHAPES 2-2

BLOCK DIAGRAM 2-3

CIRCUIT DIAGRAMS

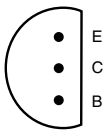
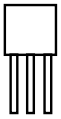
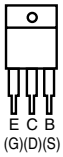
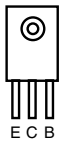
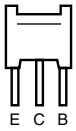
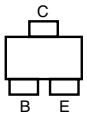
- **MAIN PWB CIRCUIT DIAGRAM (1/2)** 2-5
- **MAIN PWB CIRCUIT DIAGRAM (2/2)** 2-7
- **CRT SOCKET PWB CIRCUIT DIAGRAM** 2-9
- **FRONT CONTROL PWB CIRCUIT DIAGRAM** 2-11

PATTERN DIAGRAMS

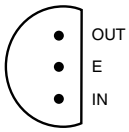
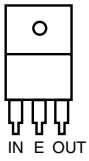
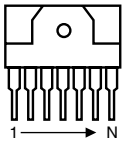
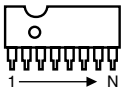
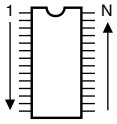
- **MAIN PWB PATTERN** 2-13
- **CRT SOCKET PWB PATTERN** 2-15
- **FRONT CONTROL PWB PATTERN** 2-16

SEMICONDUCTOR SHAPES

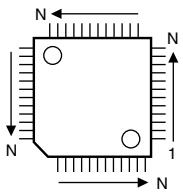
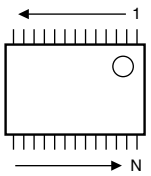
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

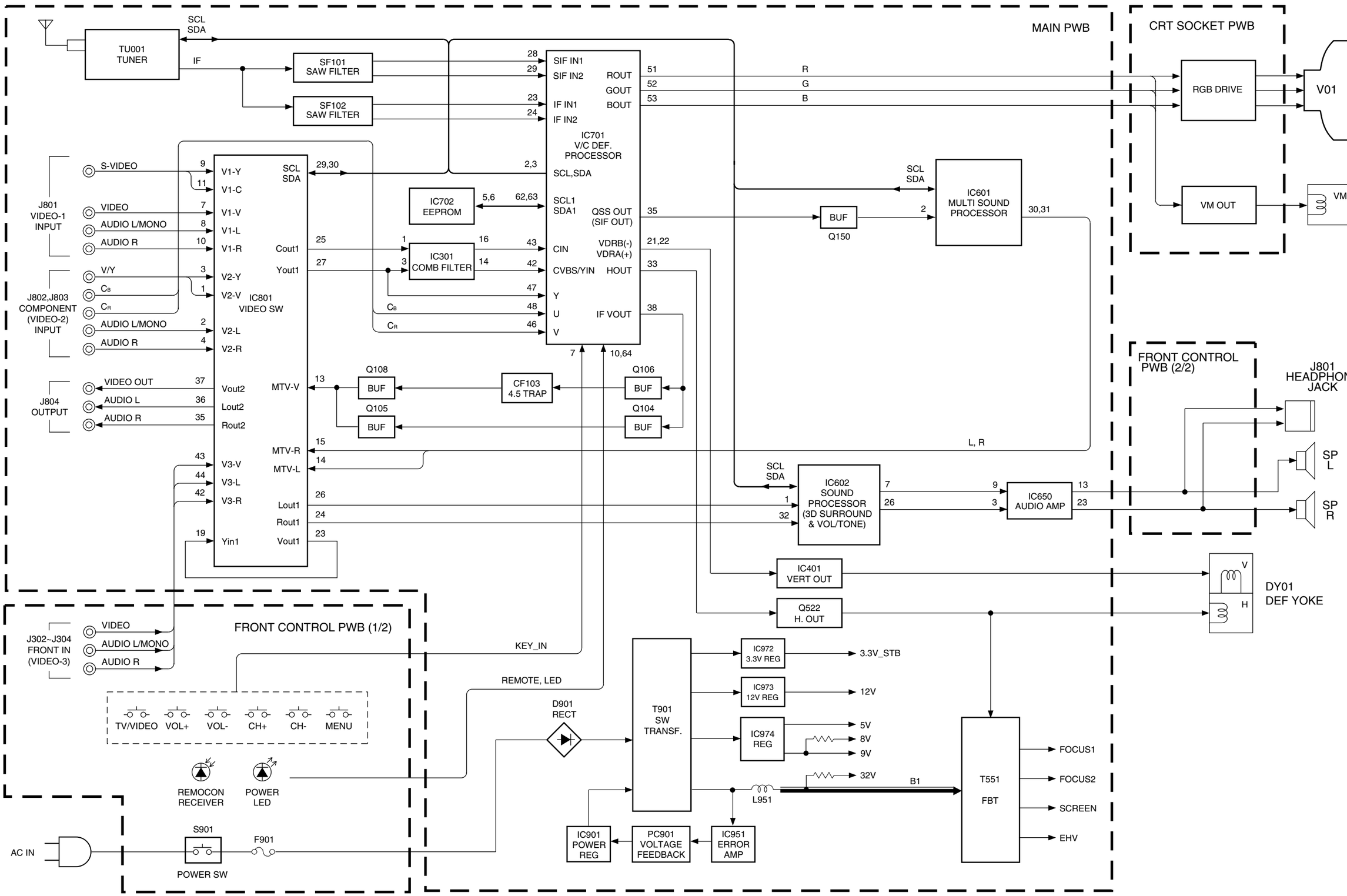
IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

CHIP IC

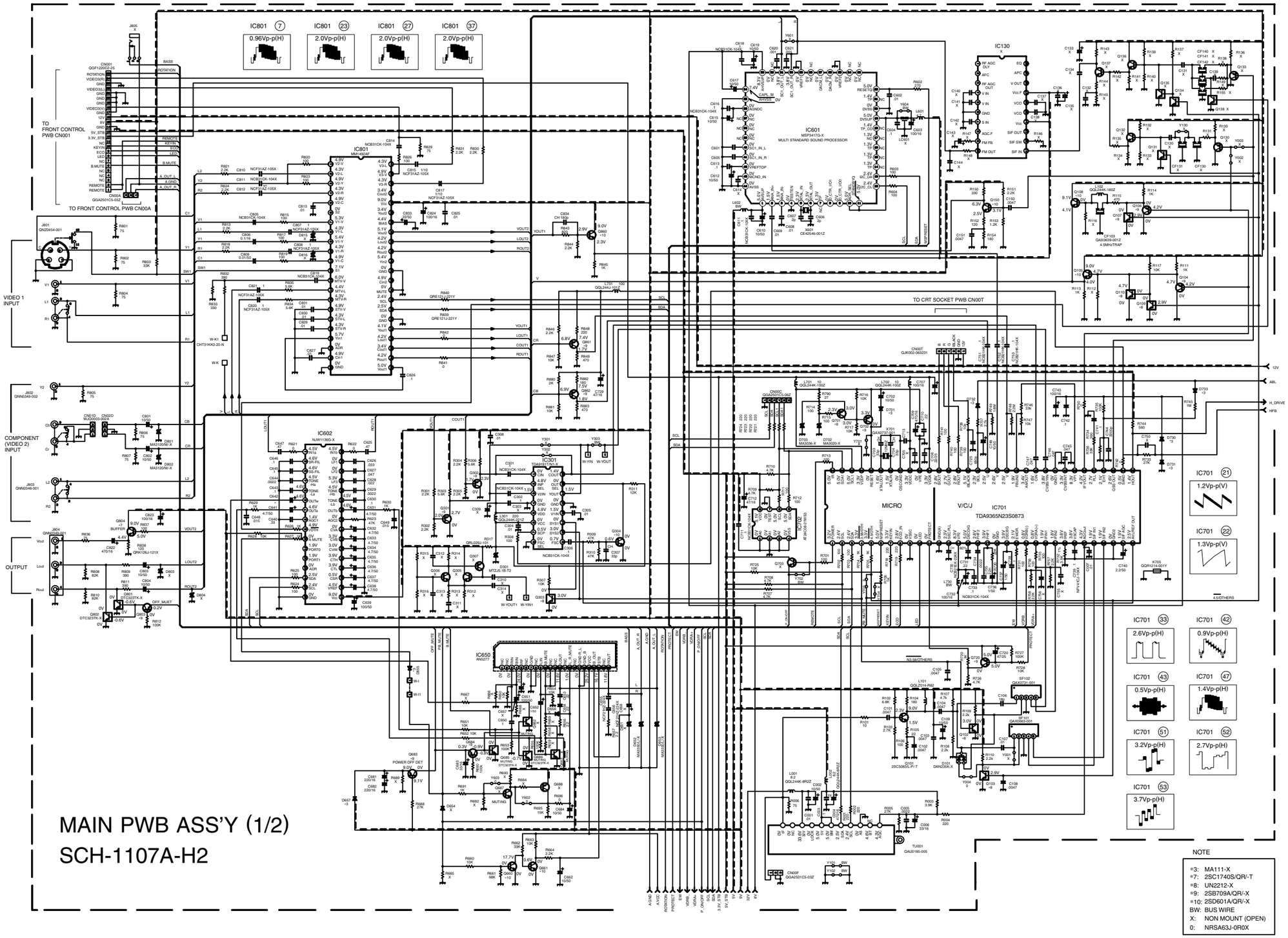
TOP VIEW		
		

BLOCK DIAGRAM

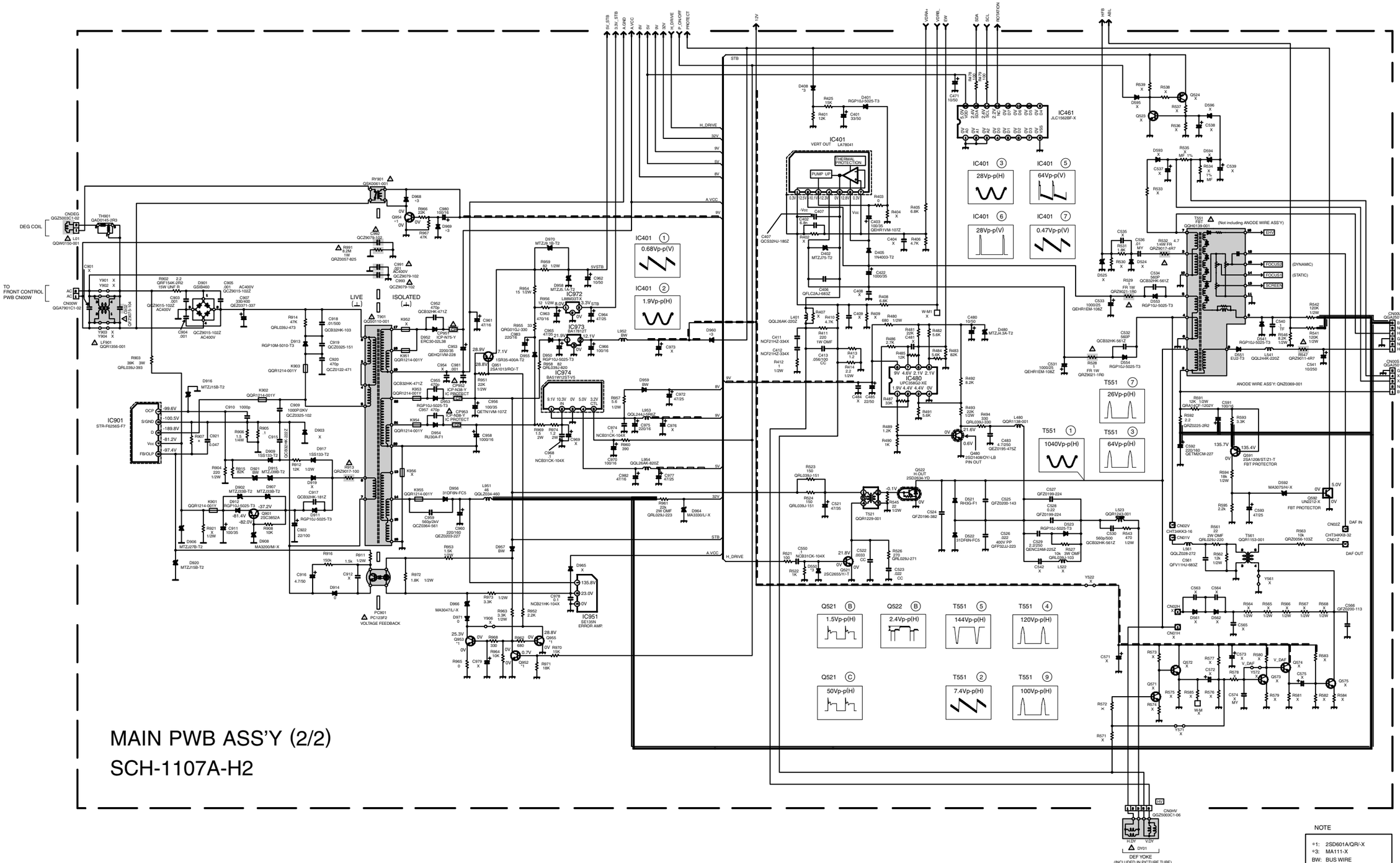


CIRCUIT DIAGRAMS

MAIN PWB CIRCUIT DIAGRAM (1/2)



MAIN PWB CIRCUIT DIAGRAM (2/2)

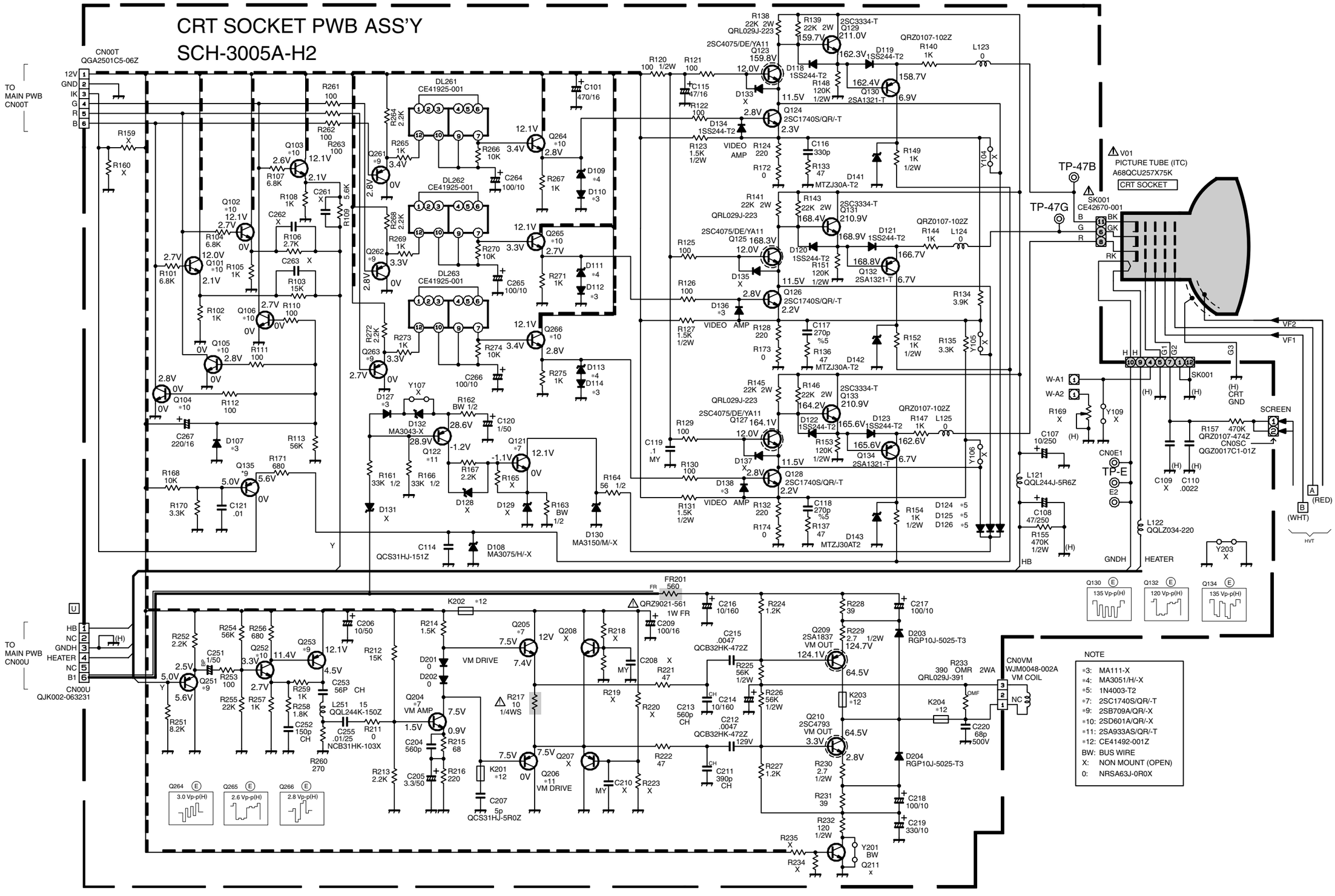


MAIN PWB ASS'Y (2/2)
SCH-1107A-H2

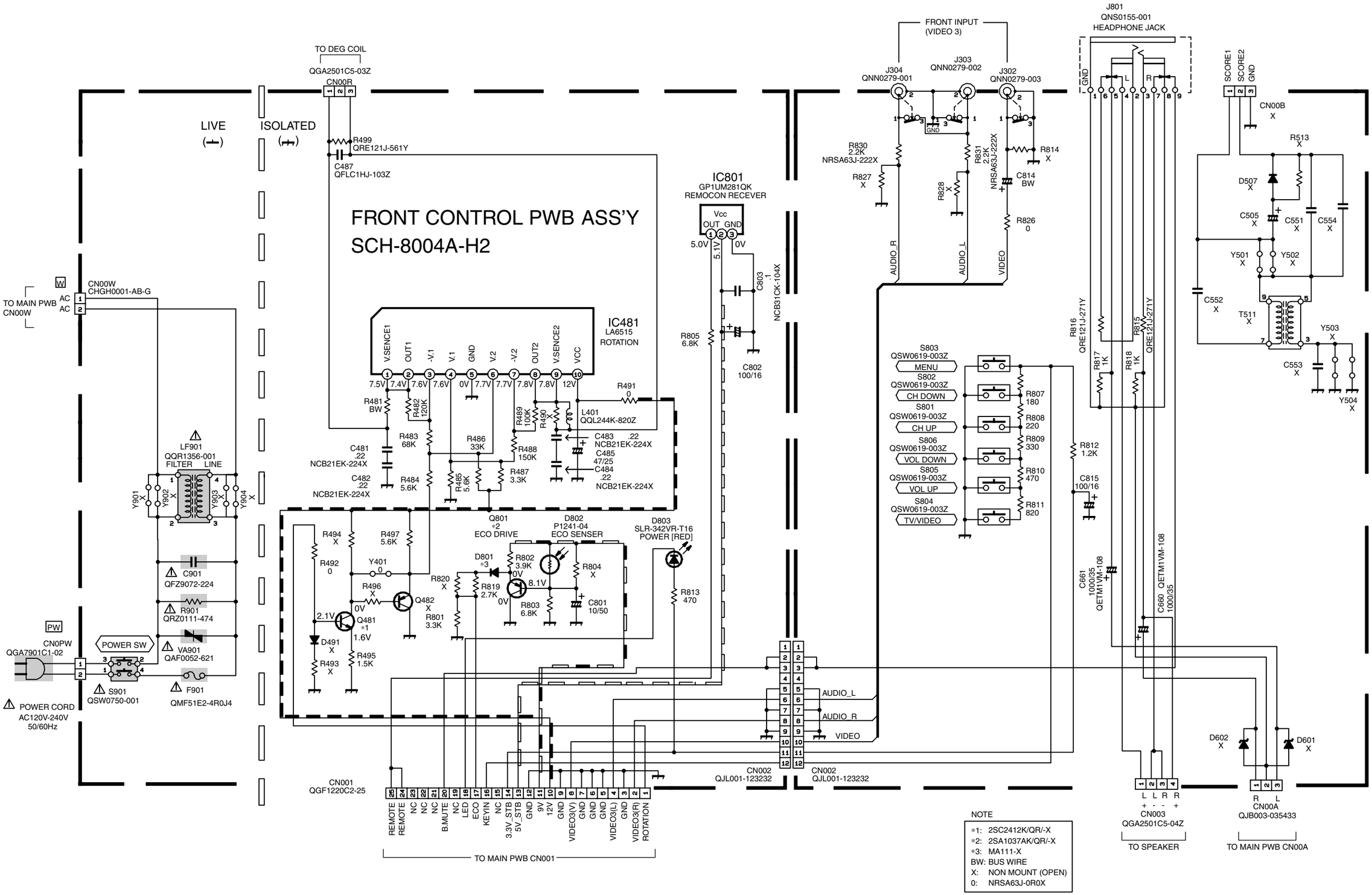
NOTE

*1: 2SD601A/QR/-X
*3: MA111-X
BW: BUS WIRE
X: NON MOUNT (OPEN)
0: NRSA63J-0R0X

CRT SOCKET PWB CIRCUIT DIAGRAM

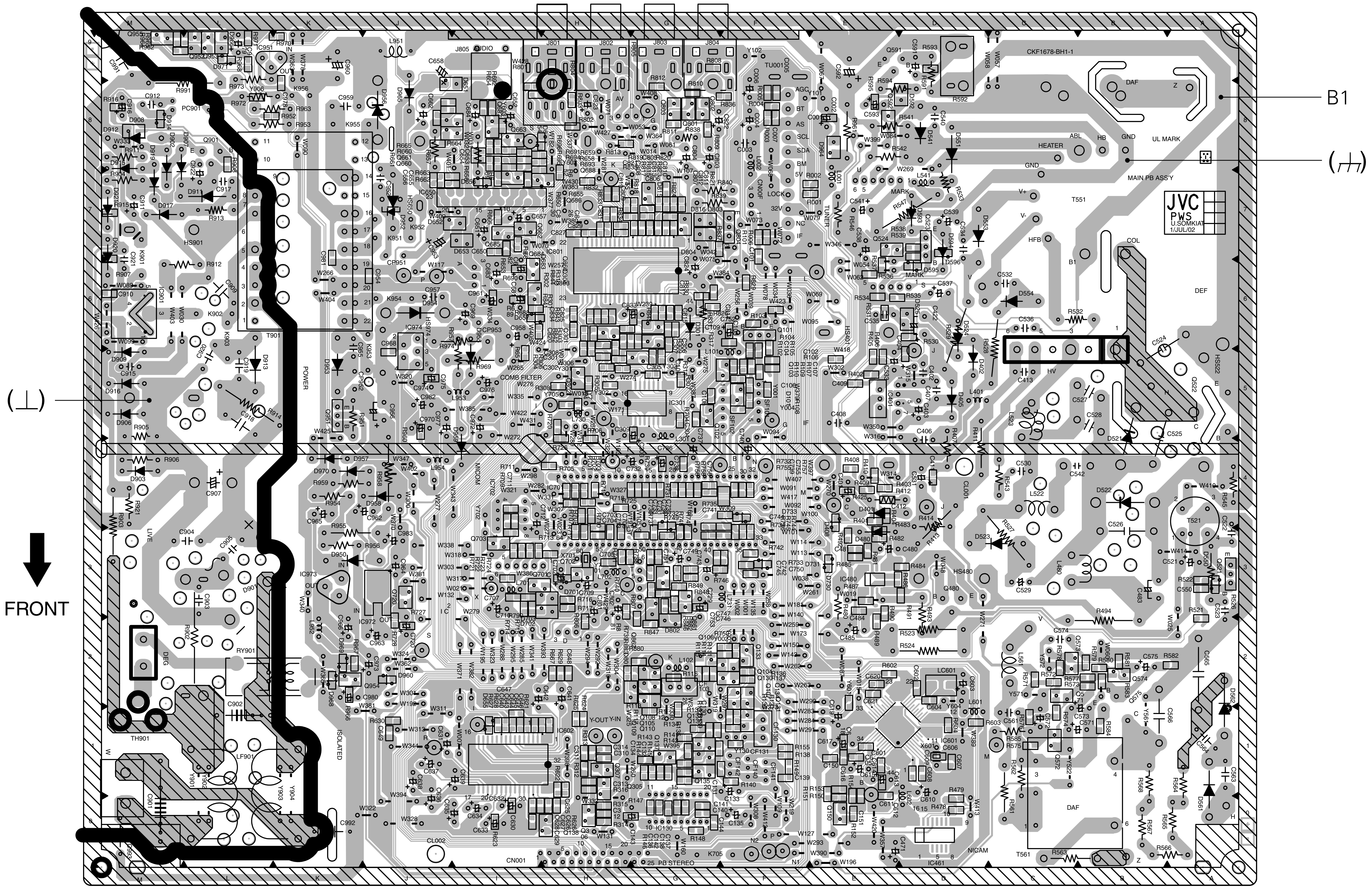


FRONT CONTROL PWB CIRCUIT DIAGRAM

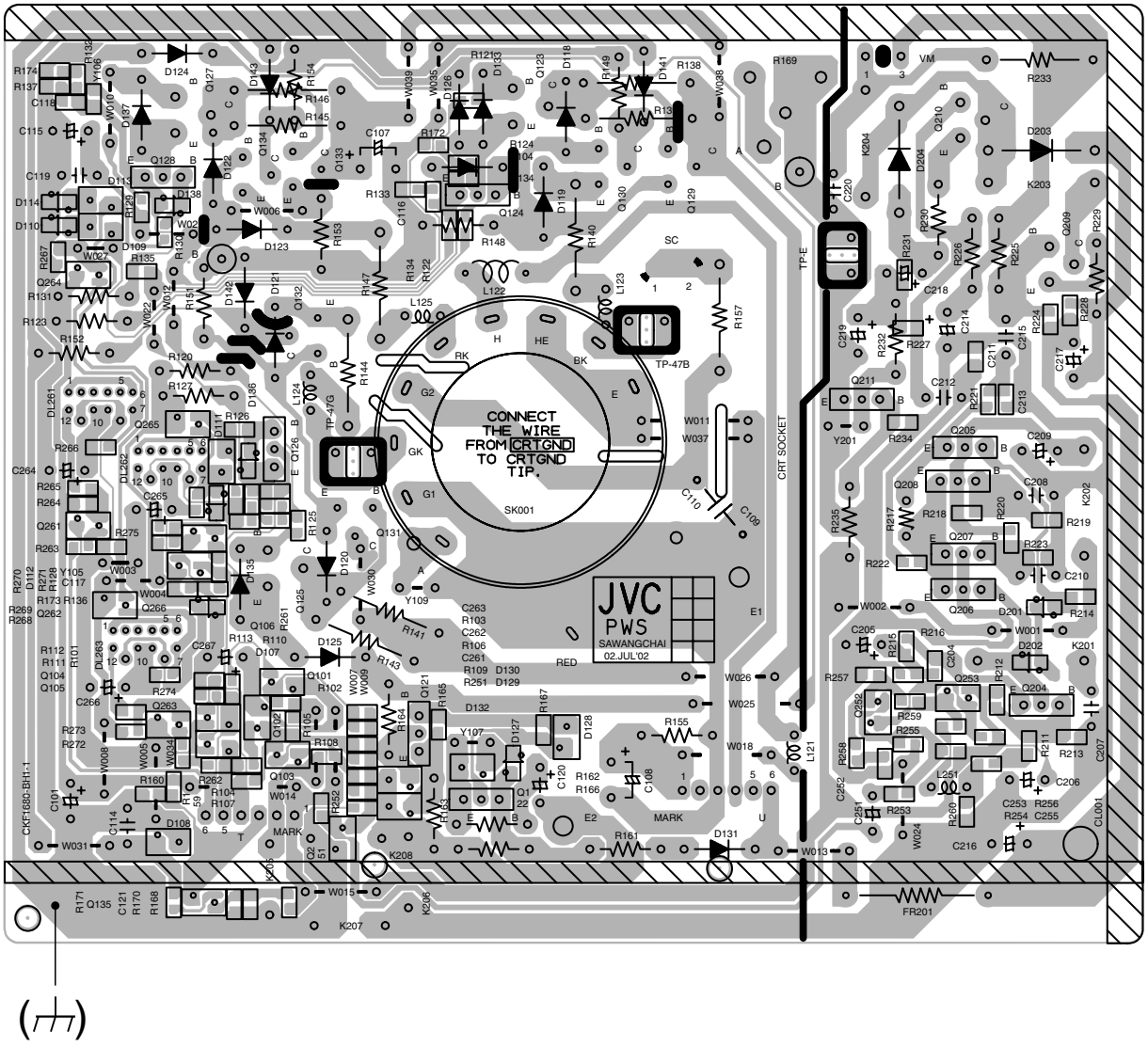


PATTERN DIAGRAMS

MAIN PWB PATTERN

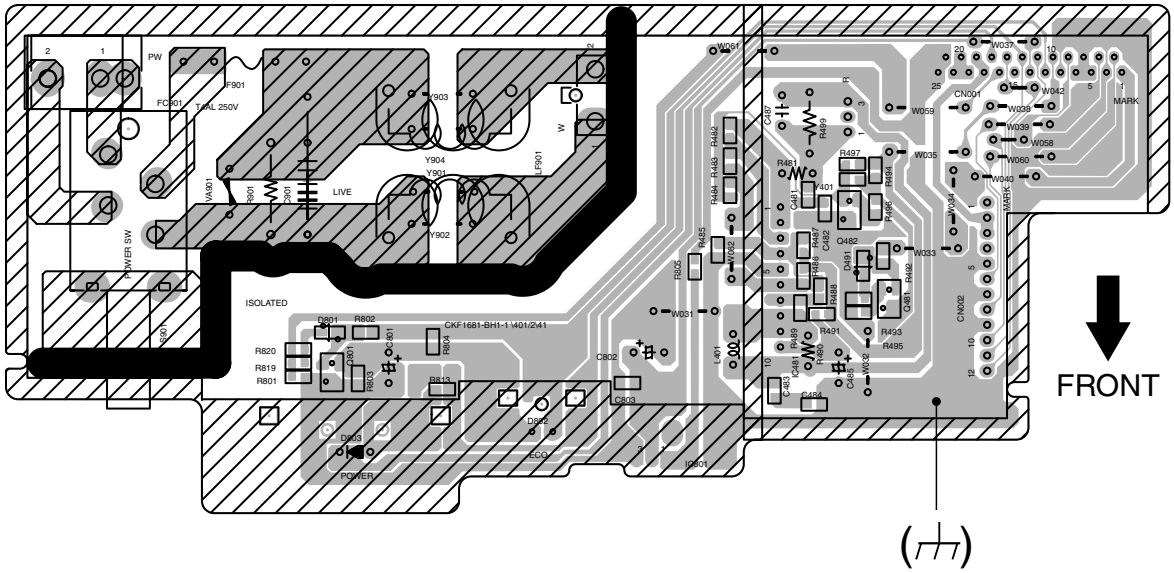


CRT SOCKET PWB PATTERN



FRONT CONTROL PWB PATTERN

– FRONT CONTROL (1/2) –



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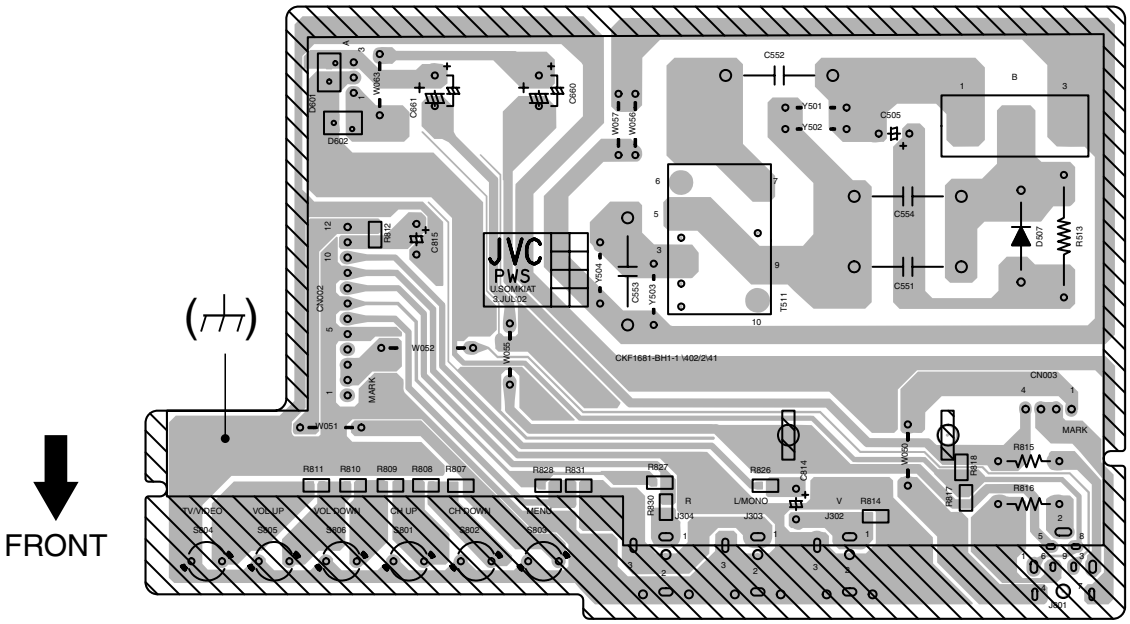

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